

HEARING ON THE MERITS

SOAH DOCKET NO. 582-07-2673

TCEQ DOCKET NO. 2007-0204-WDW

TRANSCRIPT OF PROCEEDINGS BEFORE THE
STATE OFFICE OF ADMINISTRATIVE HEARINGS
(TEXAS COMMISSION ON ENVIRONMENTAL QUALITY)

AUSTIN, TEXAS

APPLICATION OF TEXCOM GULF)
DISPOSAL, LLC, FOR TEXAS) SOAH DOCKET NO.
COMMISSION ON ENVIRONMENTAL) 582-07-2673
QUALITY COMMISSION UNDERGROUND) TCEQ DOCKET NO.
INJECTION CONTROL PERMIT NOS.) 2007-0204-WDW
WDW410, WDW411, WDW412 AND WDW413)

APPLICATION OF TEXCOM GULF)
DISPOSAL, LLC, FOR TEXAS) SOAH DOCKET NO.
COMMISSION ON ENVIRONMENTAL) 582-07-2674
QUALITY COMMISSION INDUSTRIAL) TCEQ DOCKET NO.
SOLID WASTE PERMIT NO. 87758) 2007-0362-IHW

HEARING ON THE MERITS
TUESDAY, DECEMBER 18, 2007

BE IT REMEMBERED THAT at 9:00 a.m., on
Tuesday, the 18th day of December 2007, the
above-entitled matter came on for hearing at the State
Office of Administrative Hearings, William P.
Clements, Jr., Building, 300 West 15th Street, Room
402, Austin, Texas before THOMAS WALSTON AND CATHERINE
EGAN, Administrative Law Judges, and the following
proceedings were reported by Patricia Gonzalez and
Lou Ray, Certified Shorthand Reporters of:

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Pages 1154 - 1446

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<p style="text-align: right;">Page 1155</p> <p>1 PROCEEDINGS 2 TUESDAY, DECEMBER 18, 2007 3 (9:00 a.m.) 4 (ED Exhibit Nos. 1 through 5 and 7 5 through 18 marked) 6 JUDGE WALSTON: Okay. We'll go on the 7 record. This is the hearing on the merits of the 8 Application of TexCom Gulf Disposal, LLC, for 9 Underground Injection Control Permits and for an 10 Industrial Solid Waste Permit. I believe today that 11 the Individual Protestants had some housekeeping 12 matters to take up. 13 MR. FORSBERG: Yes, Your Honor. Is it 14 all right if I do that right now? 15 JUDGE WALSTON: Yes. 16 MR. FORSBERG: May I approach? 17 JUDGE WALSTON: Yes. 18 MR. FORSBERG: Your Honor, there was an 19 issue with regards to copies of the exhibits. I want 20 the record to reflect that I'm handing two copies of 21 the exhibits to the court reporter of Nos. 1 through 22 19 of Individual Protestants, and I have two copies 23 for the Judges. 24 JUDGE WALSTON: And I assume all the 25 parties have been provided copies.</p>	<p style="text-align: right;">Page 1157</p> <p>1 copies to the court reporter. 2 JUDGE WALSTON: Okay. You'll include it 3 as a part of the record? 4 THE REPORTER: Do you want me to mark it 5 as Offer of Proof No. 1? 6 JUDGE WALSTON: Right. 7 (IP Offer of Proof No. 1 marked) 8 MR. FORSBERG: And, Your Honor, just one 9 last thing. Last evening, about nine o'clock, we got 10 an e-mail identifying a new expert witness that has 11 been retained, apparently, by TexCom that I believe 12 they're going to offer as -- they've at least titled 13 him as a rebuttal witness. I would just like -- while 14 my case is still open, I would like to reserve the 15 right -- depending on what the Court rules to any 16 objections to this nine o'clock witness, the right to 17 request a continuance. I'm not requesting one yet, 18 but I would just like to leave that issue open and 19 note for the record that I'm reserving the right to 20 request a continuance to offer -- or retain our own 21 expert. 22 JUDGE WALSTON: We'll address that when 23 we get to it. 24 MR. RILEY: Well, I'd like to say that, 25 as you know -- and I think we all know, while the name</p>
<p style="text-align: right;">Page 1156</p> <p>1 MR. FORSBERG: Yes. As far as I know, 2 no one indicated that they had not received a copy. 3 So I'll provide that. 4 JUDGE WALSTON: And if I recall 5 correctly, all of these exhibits have previously been 6 admitted. 7 MR. FORSBERG: Correct. They were 8 admitted. 9 Also, there was an issue with regards 10 to -- I had made an offer of proof with regards to 11 some prefiled testimony and it was requested that it 12 be put on paper as far as page and line numbers. I 13 would tender copies to the Judges. These are sections 14 of the prefiled testimony dealing with property 15 values. 16 JUDGE WALSTON: Did you want to mark 17 this as an exhibit or -- 18 MR. FORSBERG: Traditionally -- if the 19 Court would like to, we certainly can. I'm not 20 sure -- it's not evidence, but, I mean, we can mark 21 it. 22 JUDGE WALSTON: Right. It's not 23 evidence. And there's not one filed with the docket, 24 but the court reporter has one? 25 MR. FORSBERG: Yes. I've tendered two</p>	<p style="text-align: right;">Page 1158</p> <p>1 of the witness had been withheld until nine o'clock 2 last night, I made very clear last week on the record 3 that we intended to call a rebuttal witness that is a 4 traffic expert. So I don't think there is any 5 surprise of our intentions. I did that so that we 6 could avoid allegations such as were just made that 7 nine o'clock last night we told the parties that we 8 have a traffic witness, rebuttal. 9 JUDGE WALSTON: I do recall there being 10 a statement made last week that you would be calling a 11 traffic witness. 12 MR. FORSBERG: Your Honor, there was -- 13 I'm sorry. If I may. 14 JUDGE WALSTON: Go ahead. 15 MR. FORSBERG: And I know you may not 16 want to take this argument up at this point, but there 17 was a statement at -- I mean, they identified a 18 rebuttal witness to an issue that there's not to 19 rebut. There's been no testimony different from the 20 prefiled testimony with regards to traffic from any of 21 the parties; so I'm not exactly sure what they're 22 rebutting with this witness. 23 My guess is they're going to say the 24 Third Court of Appeals' opinion created a new issue in 25 the case when they decided that traffic was an issue,</p>

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<p>Page 1159</p> <p>1 but none of the prefiled testimony actually ever 2 changed. So they're trying to go back and open their 3 case in chief and insert a new expert witness rather 4 than rebut any testimony that has been made in 5 anyone's direct case. 6 JUDGE WALSTON: We'll take that up at 7 the time the witness is called. 8 MR. FORSBERG: Okay. Thank you, Your 9 Honor. 10 JUDGE WALSTON: But there was -- 11 Mr. Riley, to refresh your memory, is there still an 12 outstanding question on Lone Star Exhibit 19 or is 13 that cleared up? 14 JUDGE EGAN: It was one that you were 15 going to -- 16 MR. RILEY: I'll get -- 17 JUDGE EGAN: -- verify -- 18 MR. RILEY: -- back to you at lunchtime. 19 We were going -- we had to go to the TCEQ. I just 20 don't recall if we've actually done that yet. 21 JUDGE WALSTON: Any other preliminary 22 matters? 23 MR. WILLIAMS: Yes, sir, Your Honor. 24 Yesterday, it was suggested that if the 25 witness was going to make corrections to the prefiled</p>	<p>Page 1161</p> <p>1 A Kathryn Hoffman. 2 JUDGE WALSTON: Okay. Ms. Hoffman, if 3 you'd pull that microphone right up to you. 4 A (Witness complied) 5 JUDGE WALSTON: Thank you. 6 PRESENTATION ON BEHALF OF THE EXECUTIVE DIRECTOR 7 KATHRYN HOFFMAN, 8 having been first duly sworn, testified as follows: 9 DIRECT EXAMINATION 10 BY MR. WILLIAMS: 11 Q Good morning, Ms. Hoffman. Do you have in 12 front of you a binder of the Executive Director's 13 prefiled exhibits? 14 A Yes. 15 Q Would you please turn to Prefiled Exhibit 16 ED-1 and would you please describe what that is? 17 A It's the prefiled direct testimony that I 18 prepared. 19 Q And do you have any corrections or changes 20 you wish to make to your prefiled testimony at this 21 time? 22 A Yes, I do. 23 Q And is that on the handout that I have just 24 passed around the room? 25 A Yes, it is.</p>
<p>Page 1160</p> <p>1 testimony, that they be provided to the court reporter 2 and all the parties in hard copy. Is that just going 3 to be informational or should it be admitted as an 4 exhibit? 5 JUDGE WALSTON: Has the actual record 6 copy been changed to reflect what's in -- 7 MR. WILLIAMS: No. No. 8 JUDGE WALSTON: We'll go ahead and admit 9 it along with the exhibit. 10 MR. WILLIAMS: Okay. Very good. 11 JUDGE WALSTON: And with that, I believe 12 we're up to the Executive Director's case. So if 13 you'd like to call your first witness. 14 MR. WILLIAMS: At this the time, the 15 Executive Director calls Kathryn Hoffman. 16 JUDGE WALSTON: Okay. Mr. Williams, if 17 you'd pull that microphone? 18 MR. WILLIAMS: I'm sorry. 19 JUDGE WALSTON: Will you raise your 20 right hand? 21 (Witness sworn) 22 JUDGE WALSTON: Okay. You can be 23 seated. 24 And will you state your full name for 25 the record.</p>	<p>Page 1162</p> <p>1 Q Why don't you go ahead and read those changes 2 into the record. 3 A On Page 20 of 25, the question is "What were 4 the results of your modeling?" My answer is "My 5 conclusion was that the cone of influence is less than 6 a radius of 150 feet from the wellbore." 7 JUDGE WALSTON: Ms. Hoffman, you're 8 going to have to talk quite a bit louder. Get that 9 microphone right up to you. 10 JUDGE EGAN: It's on. You just have to 11 be right at it. 12 A Okay. On Page 21 of 25, the question was 13 "What was the result of your review?" My answer is "I 14 concluded that although there is little data available 15 for some of the wells, corrective action is not 16 required because the wells would not serve as a 17 conduit for movement of fluids out of the injection 18 zone into USDWs due to injection of waste into the 19 proposed wells." 20 MR. WILLIAMS: And if we could have the 21 court reporter mark this correction page as Exhibit 22 1A -- ED Exhibit 1A. 23 (ED Exhibit No. 1A marked) 24 Q (By Mr. Williams) And, Ms. Hoffman, with 25 those two corrections, do you adopt your prefiled</p>

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<p style="text-align: right;">Page 1163</p> <p>1 testimony as if you were testifying live here today?</p> <p>2 A Yes.</p> <p>3 Q Can you please describe exhibits -- let's</p> <p>4 start with Exhibit 2. What is Exhibit 2?</p> <p>5 A Exhibit 2 is my professional resume.</p> <p>6 Q And did you prepare this yourself?</p> <p>7 A Yes.</p> <p>8 Q Do you have any corrections or additions you</p> <p>9 wish to make to your resume at this time?</p> <p>10 A No.</p> <p>11 Q Go on. Let's -- Exhibit 3 is -- how would</p> <p>12 you describe Exhibit 3?</p> <p>13 A Exhibit 3 is the Executive Director's</p> <p>14 response to public comment.</p> <p>15 Q And even though this document is signed by</p> <p>16 legal staff, did you prepare all of the responses in</p> <p>17 this response to comments, or most of them?</p> <p>18 A I assisted in preparing the ones in my area</p> <p>19 of responsibility.</p> <p>20 Q And who else would have assisted in other</p> <p>21 areas?</p> <p>22 A I believe John Santos assisted with it also,</p> <p>23 and my team leader, Ben Knappe.</p> <p>24 Q Thank you.</p> <p>25 Can you identify Exhibit 4?</p>	<p style="text-align: right;">Page 1165</p> <p>1 Describe it, please, what it is.</p> <p>2 A It's the technical summary and Executive</p> <p>3 Director's preliminary decision.</p> <p>4 Q And did you write this document?</p> <p>5 A Yes.</p> <p>6 Q And was it reviewed by your team leader?</p> <p>7 A Yes.</p> <p>8 MR. WILLIAMS: Your Honor, at this time,</p> <p>9 I would offer Exhibits 1, 1A, 2 through 5, and 7</p> <p>10 through 11 in evidence.</p> <p>11 JUDGE WALSTON: Okay. And if I recall</p> <p>12 correctly, there were no objections filed to the ED</p> <p>13 exhibits. So Exhibits 1, 1A, 2 through 5 and 7</p> <p>14 through 10 are admitted.</p> <p>15 (ED Exhibit Nos. 1, 1A, 2 through 5 and</p> <p>16 7 through 10 admitted)</p> <p>17 JUDGE WALSTON: And I'll just note for</p> <p>18 the record that there is no ED Exhibit 6. Is that</p> <p>19 correct?</p> <p>20 MR. WILLIAMS: Thank you. Yes. That's</p> <p>21 correct.</p> <p>22 JUDGE WALSTON: Okay.</p> <p>23 MR. WILLIAMS: Pass the witness.</p> <p>24 JUDGE WALSTON: Applicant, Mr. Riley.</p> <p>25 MR. RILEY: I didn't know the order of</p>
<p style="text-align: right;">Page 1164</p> <p>1 A Exhibit 4 is the compliance history.</p> <p>2 Q Did you run this or was -- did somebody else</p> <p>3 on staff run this for you?</p> <p>4 A It was run by people who, according to our</p> <p>5 work process, prepare the -- or run or obtain these</p> <p>6 compliance histories.</p> <p>7 Q And I see the name Bobbie Rogans is on this</p> <p>8 one.</p> <p>9 A Yes.</p> <p>10 Q And you know Ms. Rogans?</p> <p>11 A Yes.</p> <p>12 Q Okay. Would you please turn to Exhibit 5 and</p> <p>13 describe what it is?</p> <p>14 A Exhibit 5 is a memo to the file that I wrote</p> <p>15 to document the site inspection in compliance with</p> <p>16 Texas Water Code Section 27.016.</p> <p>17 Q And would you please describe exhibits in</p> <p>18 order, 7, 8, 9 and 10?</p> <p>19 A Those are the draft permits.</p> <p>20 Q And you wrote those -- did you write those</p> <p>21 draft permits?</p> <p>22 A Yes.</p> <p>23 Q Were they approved by management?</p> <p>24 A Yes.</p> <p>25 Q And would you please turn to Exhibit 11?</p>	<p style="text-align: right;">Page 1166</p> <p>1 cross-examination was first to us, but I have no</p> <p>2 questions.</p> <p>3 JUDGE WALSTON: Okay. Well, in the</p> <p>4 event there were friendly cross, I would normally put</p> <p>5 you-all first.</p> <p>6 MR. RILEY: Okay. That's</p> <p>7 understandable.</p> <p>8 JUDGE WALSTON: Lone Star.</p> <p>9 MR. HILL: Thank you, Your Honor. We</p> <p>10 have some questions of this witness.</p> <p>11 CROSS-EXAMINATION</p> <p>12 BY MR. HILL:</p> <p>13 Q Good morning, Ms. Hoffman.</p> <p>14 A Good morning.</p> <p>15 Q My name is Jason Hill. I represent the Lone</p> <p>16 Star Groundwater Conservation District in this matter,</p> <p>17 and I do have some questions for you about your review</p> <p>18 of the TexCom UIC permit application.</p> <p>19 Initially, would you mind explaining</p> <p>20 your role with respect to the role Mr. Santos played</p> <p>21 in the review of the TexCom UIC application?</p> <p>22 A I was the project manager and the engineer</p> <p>23 assigned to the project. Mr. Santos was the geologist</p> <p>24 assigned to the project.</p> <p>25 Q Would you mind elaborating on the roles and</p>

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<p style="text-align: right;">Page 1167</p> <p>1 responsibilities of the project manager in a case like 2 this?</p> <p>3 A The project manager is responsible for 4 keeping the project on schedule and is responsible for 5 drafting the documents associated with the permit 6 application such as draft permits and technical 7 summary and Executive Director's preliminary decision. 8 And in my case, also, as the engineer for the project, 9 I reviewed all parts of the application except those 10 that were clearly related to geology such as Section V 11 and the geology-related material in Section VII.</p> <p>12 Q You mentioned having some role in the 13 drafting of documents related to the application, 14 including the draft permits and the technical summary 15 and Executive Director's preliminary decision. Can 16 you explain the magnitude of the role that you played 17 in the drafting of each of those respective documents? 18 How involved were you or to what extent can you claim 19 authorship of each of those documents?</p> <p>20 A I was the primary author of each of those. I 21 asked John to review each of them and give me 22 comments, inputs, questions on them, and they --</p> <p>23 Q Go ahead.</p> <p>24 A They were also reviewed by management.</p> <p>25 Q Okay. As far as authorship of the documents,</p>	<p style="text-align: right;">Page 1169</p> <p>1 deficiencies are found, then an administrative NOD is 2 issued. And then if all of the deficiencies are 3 cleared up and the application is complete, then it 4 would be declared administratively complete.</p> <p>5 Then the application undergoes a 6 technical review. And in the course of that review, 7 if deficiencies are found, then a notice of deficiency 8 is issued. And, typically, there are two -- 9 opportunities for two notices of deficiencies for 10 applications.</p> <p>11 And then if the application is 12 technically complete, an initial draft permit is 13 drafted. And that permit, along with a draft 14 technical summary and Executive Director's preliminary 15 decision, is mailed to the applicant. They have an 16 opportunity to review it for accuracy and comment on 17 it.</p> <p>18 And then after the initial draft permit 19 stage, typically final draft permits would be drafted 20 and -- along with finalizing the technical summary and 21 Executive Director's preliminary decision. And those 22 documents, once approved, are sent down to the chief 23 clerk's office.</p> <p>24 Q Where in that chronology of events would you 25 say this application is today? Is it still considered</p>
<p style="text-align: right;">Page 1168</p> <p>1 you were involved, Mr. Santos was involved. Was 2 anybody else involved in the actual authorship of 3 those documents? And to be clear, I'm speaking of the 4 draft permits for the UIC -- proposed UIC wells as 5 well as the technical summary for that application.</p> <p>6 A As far as actually drafting the documents, 7 yes, it was primarily me with input from John.</p> <p>8 Q Okay. Would you mind explaining the 9 application process that's associated with an 10 application like a UIC application at issue in this 11 case?</p> <p>12 A Could you please clarify exactly what you're 13 asking?</p> <p>14 Q Specifically, I'm curious to know, 15 chronologically speaking, the steps that an 16 application typically follows from the time it arrives 17 on your desk until the time it results in the issuance 18 of a draft permit.</p> <p>19 A Okay. A typical sequence of events is: When 20 the application comes in to our team or our agency, it 21 receives an administrative review. Then it is turned 22 over to -- it's turned over for a technical review, 23 and if -- well, let me back up a little bit.</p> <p>24 In the course of the administrative 25 review, if deficiencies are found -- if administrative</p>	<p style="text-align: right;">Page 1170</p> <p>1 to be in the initial draft permit stage or is the 2 agency beyond that stage right now?</p> <p>3 A These permits were sent down to the TCEQ 4 chief clerk's office quite some time ago. And, of 5 course, a contested case hearing was requested and 6 granted by the Commission, and so we're beyond the 7 stages I just described.</p> <p>8 Q Okay. So when you reference "final draft" 9 or -- do you use the term "final permit issuance" or 10 "final draft permit issuance"?</p> <p>11 A Final draft permit.</p> <p>12 Q Final draft permit has been issued by the 13 agency in this case. Isn't that correct?</p> <p>14 A Well, I don't know about the term "issued." 15 The final draft permits were sent down to the chief 16 clerk's office.</p> <p>17 Q Okay. Is there an opportunity during any of 18 that process for an applicant to make any changes to 19 the application that you would consider an amendment 20 to the application?</p> <p>21 A Yes.</p> <p>22 Q Can you explain that process or those 23 opportunities?</p> <p>24 A Yes. The application can be amended in 25 response to notices of deficiencies or other request</p>

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<p style="text-align: right;">Page 1171</p> <p>1 for information. Actually, if -- in general terms, if 2 circumstances come up for a given applicant, that they 3 want to -- during the technical review, if they wanted 4 to change something, they can initiate that change if 5 it's early enough in the process that we can 6 accommodate that and still keep the project on 7 schedule. So it isn't always done via formal -- it 8 isn't always done just in response to notices of 9 deficiency.</p> <p>10 Q Is there an opportunity after which an 11 applicant is precluded from making a permit amendment?</p> <p>12 A Yes.</p> <p>13 Q Okay. When is that point in time -- or in 14 the process, rather.</p> <p>15 A Well, most certainly after permits are 16 issued.</p> <p>17 Q Meaning?</p> <p>18 A By that, I mean issued --</p> <p>19 Q Drafted?</p> <p>20 A -- by the Commission.</p> <p>21 Q Final permits?</p> <p>22 A Not draft permits, but after the Commission 23 issues the permits.</p> <p>24 Q What about at any point in time before then?</p> <p>25 A There could be some gray areas that -- it</p>	<p style="text-align: right;">Page 1173</p> <p>1 A It's always a case-by-case evaluation, and 2 the decision involves management.</p> <p>3 Q So that's a decision that's made not by you, 4 necessarily, but by somebody that you, perhaps, might 5 report to?</p> <p>6 A Yes.</p> <p>7 Q And what -- just to make sure that you and I 8 are on the same page, can you -- is there a definition 9 you can associate with an -- what it means to have an 10 amendment to an application?</p> <p>11 A I would refer to the rules for definitions.</p> <p>12 Q Okay.</p> <p>13 A I don't have the -- it's probably defined in 14 another chapter, like 281 or maybe 305. I don't have 15 that in front of me.</p> <p>16 Q That's fine. Let me -- and let me make sure 17 I understand your role in that process. If I 18 understand your testimony correctly, management makes 19 the ultimate decision of whether or not to accept an 20 application amendment. Is that correct? Do I 21 understand that to be your testimony?</p> <p>22 A No.</p> <p>23 Q Okay. Then help get me on the right page, 24 then, if you don't mind.</p> <p>25 MR. RILEY: I can't hear you, Mr. Hill.</p>
<p style="text-align: right;">Page 1172</p> <p>1 always is a case-by-case consideration.</p> <p>2 Q Can you explain for me the considerations 3 that you or management makes in determining those gray 4 areas and when it is or is not appropriate for an 5 applicant to amend a permit?</p> <p>6 A Well, I have -- I'm aware of situations where 7 if draft permits are sent to the chief clerk's office 8 and it's discovered that a clerical or typographical 9 or nonsubstantive error has been found, then 10 corrections have been made.</p> <p>11 Q And what about with respect to substantive 12 changes in the application?</p> <p>13 A Could you please clarify your question?</p> <p>14 Q After issuance of the final draft permits or 15 after final draft permits have been submitted to the 16 clerk -- is that --</p> <p>17 A Yes.</p> <p>18 Q -- is that the process? Have you ever known 19 of the agency accepting a substantive amendment to a 20 permit application?</p> <p>21 A I can't answer that because I don't know what 22 constitutes substantive.</p> <p>23 Q Would it help if we were to winnow out the 24 scenarios that you just discussed? Meaning, changes 25 that weren't clerical or typographical in nature.</p>	<p style="text-align: right;">Page 1174</p> <p>1 MR. HILL: I'm sorry.</p> <p>2 Q (By Mr. Hill) Help get me on the right page, 3 then, if you don't mind.</p> <p>4 A In the context of a change to be made to a 5 final draft permit that is already in the chief 6 clerk's office, management would be involved in 7 deciding whether or not it's appropriate to make the 8 change at that time.</p> <p>9 Q Okay. Would you be involved in those 10 discussions on whether or not it would be appropriate 11 to make the change at that time?</p> <p>12 A Yes.</p> <p>13 Q Okay. Let me ask you if you had any 14 involvement at any point in time, if you can recall, 15 in the application submitted by Crossroads 16 Environmental for the well that was eventually 17 permitted as WDW-315.</p> <p>18 A No. Not that I can recall.</p> <p>19 Q Okay. In your review of the TexCom 20 application for any of the four injection wells that 21 are proposed in their applications, do you recall 22 relying on or reviewing any of the material you might 23 have on file regarding the Crossroads Environmental 24 application for WDW-315?</p> <p>25 A No, unless it was submitted as part of the</p>

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<p style="text-align: right;">Page 1175</p> <p>1 TexCom application.</p> <p>2 Q Okay. Do you recall if there were any parts</p> <p>3 of that Crossroads Environmental application that was</p> <p>4 submitted with the TexCom application?</p> <p>5 A The completion report.</p> <p>6 Q Would you mind explaining how you integrated</p> <p>7 that document into your review of TexCom's overall</p> <p>8 application?</p> <p>9 A The completion report was referenced in -- it</p> <p>10 was included in the application as Volume 6 and it was</p> <p>11 referenced in other parts of the application --</p> <p>12 information from the completion report was referenced</p> <p>13 in other parts of the application.</p> <p>14 Q Let me ask you -- well, can -- if you can</p> <p>15 recall, do you remember how you used that particular</p> <p>16 document, the completion report, as part of your</p> <p>17 overall and ultimate determination on whether or not</p> <p>18 to issue draft permits in this application?</p> <p>19 A Not specifically.</p> <p>20 Q Okay. You mentioned earlier that -- I don't</p> <p>21 want to mischaracterize your testimony, but the way I</p> <p>22 understood your testimony was that you, in essence,</p> <p>23 defer to Mr. Santos for geological assessments of the</p> <p>24 application, specifically Section V and Section VII.</p> <p>25 Is that a fair representation of the roles that you</p>	<p style="text-align: right;">Page 1177</p> <p>1 understand is -- by "reviewed," I'm trying to</p> <p>2 understand what that means exactly.</p> <p>3 A That means was responsible for determining</p> <p>4 compliance with the rules for that material.</p> <p>5 Q Is it typical in a -- for you, in your</p> <p>6 experience reviewing Class I UIC permit applications,</p> <p>7 is it typical for you to conduct formation pressure</p> <p>8 modeling in your role as reviewing these permit</p> <p>9 applications?</p> <p>10 A For this project, yes.</p> <p>11 Q What about with respect to other Class I UIC</p> <p>12 projects?</p> <p>13 A I have done it for other projects. It's not</p> <p>14 something I do for each and every one. It's -- it</p> <p>15 depends on my assignment on a given project.</p> <p>16 Q And so, to be clear, that was a</p> <p>17 responsibility that you undertook and not Mr. Santos</p> <p>18 with respect to this application?</p> <p>19 A Yes. Could you please clarify exactly what</p> <p>20 you're asking?</p> <p>21 Q I'm asking -- I want to make sure that I</p> <p>22 understand that -- with respect to TexCom's UIC</p> <p>23 application, any formation modeling that was</p> <p>24 conducted. And it sounds like you did conduct</p> <p>25 formation pressure modeling on your own. Was that</p>
<p style="text-align: right;">Page 1176</p> <p>1 two played in this application?</p> <p>2 A I would not use the word "defer."</p> <p>3 Q Okay.</p> <p>4 A It was his assignment and it's his area of</p> <p>5 expertise.</p> <p>6 Q And so please explain how you relied upon</p> <p>7 Mr. Santos in your management of this application in a</p> <p>8 little bit more detail, if you don't mind.</p> <p>9 A He reviewed the geology in Section V and he</p> <p>10 reviewed -- I want to get out the application for a</p> <p>11 moment and make sure.</p> <p>12 Q Sure. Sure.</p> <p>13 (Brief Pause)</p> <p>14 MS. GOSS: Your Honor, Emily Collins has</p> <p>15 told me that the witness is looking at OPIC's copy and</p> <p>16 that the record copy is to the -- over here to</p> <p>17 Kathryn's right. So if you wouldn't mind --</p> <p>18 A I'm sorry. I didn't know.</p> <p>19 MS. GOSS: -- getting the other copy.</p> <p>20 So maybe that easel might be in the way.</p> <p>21 I can't tell.</p> <p>22 (Brief Pause)</p> <p>23 A John Santos reviewed Section V and Section</p> <p>24 VII.A, the geology-related material in Section VII.</p> <p>25 Q (By Mr. Hill) And what I'm trying to</p>	<p style="text-align: right;">Page 1178</p> <p>1 something that you undertook or Mr. Santos undertook?</p> <p>2 A I undertook, actually, performing the</p> <p>3 modeling.</p> <p>4 Q Did you make the ultimate determination on</p> <p>5 the input values to use in that model or was that</p> <p>6 something that you relied upon Mr. Santos for guidance</p> <p>7 upon?</p> <p>8 A I relied on the values in the application.</p> <p>9 Q Okay. And you've mentioned that sometimes</p> <p>10 you do conduct modeling and sometimes you don't. Can</p> <p>11 you help me understand how you distinguish between</p> <p>12 those situations?</p> <p>13 A When I'm assigned to be the project manager</p> <p>14 and engineer on a project, then I review -- then I</p> <p>15 typically would do the modeling. If I'm strictly</p> <p>16 assigned to an engineering review on an application</p> <p>17 that consists of Section VI of the application, then I</p> <p>18 do not do the modeling.</p> <p>19 Q Does that mean somebody else is charged with</p> <p>20 that responsibility?</p> <p>21 A That's correct.</p> <p>22 Q Okay. So is it fair to say that typically</p> <p>23 it's the agency's approach to consistently conduct</p> <p>24 their own pressure models in Class I UIC permit</p> <p>25 applications?</p>

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<p style="text-align: right;">Page 1179</p> <p>1 A Could you clarify what you mean by "their 2 own"?</p> <p>3 Q As opposed to relying on the formation 4 modeling that the applicant provides in the -- well, 5 let me -- I tell you what. Let me take a step back. 6 Why do you, in your practice, conduct 7 pressure models in your -- as part of your review of 8 Class I UIC applications?</p> <p>9 A It's a normal part of our team process to use 10 our PRESS model and run that to review an application. 11 Q And what's the purpose of doing that?</p> <p>12 A The purpose is to confirm whether or not the 13 applicant's modeling seems reasonable. 14 Q Okay. And so if I understand your testimony 15 correctly, sometimes you are charged with the 16 responsibility of conducting models for Class I UIC 17 applications; sometimes that responsibility falls on 18 someone else. Is that a fair assessment of your 19 testimony?</p> <p>20 A Could you please repeat that?</p> <p>21 Q Yeah. Sometimes you are the one who is 22 obligated to conduct the pressure modeling in 23 association with your review of the applications and 24 sometimes that modeling responsibility falls on 25 someone else. Is that correct?</p>	<p style="text-align: right;">Page 1181</p> <p>1 technical summary that the agency issued for the 2 TexCom applications is a fair and accurate 3 representation of the basis of the agency's 4 determination that final draft permit should be issued 5 in this case?</p> <p>6 A I missed the first part of your question. 7 Q Is -- to the best of your knowledge, is the 8 technical summary -- does it provide a -- albeit, 9 general, but a fair characterization of the basis for 10 the agency's determination to issue final permit -- 11 draft permits?</p> <p>12 A The Executive Director's preliminary decision 13 states the -- just what it -- it's the Executive 14 Director's preliminary decision. 15 Q Okay. You conducted pressure modeling in 16 this case, we've discussed. Would you mind explaining 17 the process you used to conduct that modeling?</p> <p>18 A I used the input parameters, the reservoir 19 parameters listed in Table 7-3, and input them into 20 the PRESS model that our team uses. 21 Q Do you recall or do you have those input 22 parameters available to you?</p> <p>23 A Yes. I'm not absolutely sure this is the 24 latest copy of the application that incorporates NOD 25 responses, but, yes, I have Table 7-3 in front of me.</p>
<p style="text-align: right;">Page 1180</p> <p>1 A Yes, for different projects. 2 Q Okay. Can you explain for me the -- based on 3 your understanding of Commission practices and the 4 TCEQ's rules, what the purpose of the technical 5 summary is?</p> <p>6 A The technical summary is required by rules, 7 and it's required to have -- to contain certain 8 information. I believe, if I'm not mistaken, some 9 place in Chapter 281 is where that requirement is. 10 Q Do you have any understanding or insight on 11 what the overarching purpose of the technical summary 12 is? Other than to satisfy TCEQ rules, I'm curious to 13 know if you know what -- why the rules require a 14 technical summary.</p> <p>15 A I believe it is used by anyone who reviews 16 the draft permits as some -- a summary of information 17 about the project. 18 Q Okay. Is -- if I recall, in the technical 19 summary issued on TexCom's UIC applications, it 20 appears as though there was some explanation for the 21 agency's final determination to issue draft permits. 22 Is that a fair characterization of some of the 23 information that's included in a technical summary?</p> <p>24 A Yes. 25 Q And is it your understanding that the</p>	<p style="text-align: right;">Page 1182</p> <p>1 Q Okay. Let me ask you, along those lines, do 2 you recall when in the -- in your -- in the process of 3 your review of these applications, when in that 4 process you conducted the pressure modeling? Was it 5 before TexCom had responded to agency NODs or was it 6 at sometime after that?</p> <p>7 A It was before. 8 Q Okay. Did you conduct any pressure modeling 9 based on any information that TexCom provided to the 10 agency in responses -- in their responses to the 11 agency's NODs?</p> <p>12 A I can't remember right now. 13 Q Okay. You said you have the table available 14 to you -- available in front of you. Can you identify 15 the input parameters that you used in your modeling 16 assumptions?</p> <p>17 A Yes. I used a porosity of 0.24. I used 18 permeability of 500 millidarcies. And I used a net 19 layer thickness including both the Zones 1 and 2 20 identified on this table of 145 feet and 401 feet for 21 a total of 546 feet. 22 Q Do you recall a value you associated for 23 viscosity in your modeling?</p> <p>24 A I would have to -- I don't recall. 25 Q Okay.</p>

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<p style="text-align: right;">Page 1183</p> <p>1 A It came from the application, however. 2 Q Okay. Let me ask you: When you conduct that 3 modeling, do the results of those models become part 4 of your file or is that information that's typically 5 stored on -- and kept on -- you know, in electronic 6 form on a computer? 7 A I keep a paper copy in a file and the paper 8 comes from an electronic copy. 9 Q Okay. So if I understand you correctly, you 10 plug the inputs into the software. The software gives 11 you an output, and then, essentially, you print the 12 results of that modeling out onto a piece of paper. 13 Is that right? 14 A Yes. 15 Q Okay. And do I understand -- well, let me 16 ask you to clarify if you can. Do you recall how many 17 models you ran in your review of the TexCom permit 18 applications? 19 A I don't recall. 20 Q Okay. 21 A But I think it was the one using these input 22 values. I recall running one model with these input 23 values in the course of my review. 24 Q In your prefiled testimony, and specifically 25 with respect to the corrections that you identified</p>	<p style="text-align: right;">Page 1185</p> <p>1 model, was to see whether the results would be in the 2 ballpark or somewhat similar. 3 Q So do you consider a cone of influence of 4 750 feet to be in the ballpark of a cone of influence 5 of 150 feet with respect to WDW, what will be, 410? 6 A Well, 750 feet was brought to my attention in 7 the course of these proceedings. At the time I 8 reviewed the application, the cone of influence that 9 the applicant calculated was much less than that. I 10 can't remember the exact number without looking it up 11 in the application. 12 Q Do you recall -- or let me ask you if you 13 understood Mr. Casey's explanation for why they were 14 able to determine a different cone of influence of 15 750 feet as opposed to their original calculation of 16 150 feet. 17 A I think so. 18 Q Can you explain that for us, please? 19 A I believe it was because -- if I understood 20 the testimony correctly, because of a difference in 21 the value of the gel strength that was used between 20 22 psi per 100 square feet versus 40. 23 Q Let me make sure I understand. If I recall, 24 that was an issue that was the subject of a notice of 25 deficiency early on in the application process. Is</p>
<p style="text-align: right;">Page 1184</p> <p>1 this morning, you indicate that your conclusion was 2 that the cone of influence of the proposed injection 3 activity -- or the injection activities that TexCom 4 proposes would be less than 150 feet from the 5 wellbore. Is that correct? 6 A Yes. 7 Q Do you still have that belief? 8 A Yes, based on my modeling. 9 Q Okay. If I recall, you've been -- you've 10 been present during the majority, if not all, of the 11 testimony during this contested case hearing. Is that 12 accurate? 13 A Yes. 14 Q Okay. And so were you able to hear the 15 testimony of -- I believe it was Mr. Casey's testimony 16 where he indicated that TexCom actually had calculated 17 a zone of -- a cone of influence, rather, to radiate 18 to 750 feet as opposed to 150 feet. Were you present 19 for that testimony? 20 A Yes. 21 Q Do you agree with that assessment? 22 A For the modeling he did, yes. 23 Q Have you conducted modeling to verify and -- 24 to verify his assessment? 25 A That was the purpose of running the PRESS</p>	<p style="text-align: right;">Page 1186</p> <p>1 that not correct? 2 A Yes. 3 Q Was that -- and explain to me, then, based on 4 your understanding of how that change of information 5 should lead to a different cone of influence 6 calculation. 7 A Well, the -- that information is used in 8 determining the pressure -- the amount of pressure 9 build-up that would be needed to possibly displace 10 fluids in an abandoned wellbore. So that is where it 11 would come into play. 12 Q When you -- if you can recall, when you ran 13 your pressure modeling in your review of the TexCom 14 application, what assumptions did you make with regard 15 to the amount of pressure it would take to displace 16 mud in a wellbore? 17 A My amount of pressure build-up required came 18 out to be 418 psi. I believe the applicant's was 421. 19 Q Was the applicant's calculation of 421 psi 20 based on a mud gel strength of -- is it 20 pounds 21 versus 40 pounds? Is that right? 22 A Yes. I believe it was 20 pounds. I know I 23 used 20 pounds. 24 Q Okay. So I'm having a hard time 25 understanding, then, how the change in the gel</p>

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<p style="text-align: right;">Page 1187</p> <p>1 strength of the mud would impact, ultimately, the 2 applicant's cone of influence if the modeling that you 3 were able to verify that they conducted used a 4 pressure increase of 421 psi? 5 A At the moment, I can't remember what the 6 basis for my writing that NOD was. That NOD item 7 was -- I can't remember where I saw 40 pounds in their 8 calculation that I asked them to correct. I could 9 look at a copy of the NOD if it's been put in the 10 record. 11 Q I'd be more than happy to have you look at it 12 if it will refresh your recollection. 13 A Okay. 14 MR. WILLIAMS: Can we go off the record 15 while we find it? 16 JUDGE WALSTON: Sure. We'll go off the 17 record. 18 (Brief Pause) 19 JUDGE WALSTON: Back on the record. 20 Q (By Mr. Hill) Do you have those notices of 21 deficiency or notice of deficiency in front of you? 22 A Yes. 23 (Brief Pause) 24 A Could you please remind me of the question? 25 Q (By Mr. Hill) I think we were discussing how</p>	<p style="text-align: right;">Page 1189</p> <p>1 Q Okay. And what were the results of that 2 modeling? 3 A It came up with a larger cone of influence. 4 Q Do you remember specifically what the cone of 5 influence was? 6 A What I changed about the model was I used a 7 thickness of only 145 feet. 8 Q Because in your prior model, if I understood 9 you correctly, you used a thickness of 546 feet. Is 10 that correct? 11 A Correct. 12 Q Had the applicant proposed a thickness of 13 546 feet anywhere in the application that you recall? 14 A Yes. 15 Q And where in the application is that found -- 16 or explain that for me if you can, if you don't need 17 to review the application. 18 A It's in Table 7-3. 19 Q And in Table 7-3 we'll find that applicant 20 assumes injection reservoir thickness of 546 feet? 21 A Total. They used -- it's my understanding 22 that their model used 145 feet, and then beyond the 23 fault, they added in the extra thickness -- the extra 24 400 -- well, the extra thickness of -- I believe it's 25 listed as Zone 2. I want to confirm that. Yes, the</p>
<p style="text-align: right;">Page 1188</p> <p>1 the issue of the mud gel strength was addressed by the 2 agency under notices of deficiency and how the amended 3 or different information provided by the applicant 4 impacted your assessment of the cone of influence. 5 A The pages here appear to be pages that were 6 updated in the NOD response, because both of the pages 7 referenced in my NOD item list 20 pounds per 100 8 square feet as the gel strength. The gel strength 9 comes into play in calculating the pressure 10 required -- the resistance pressure of the mud left in 11 an abandoned borehole, and so that's where it factors 12 in. 13 Q Just to make sure I'm clear, the 7 -- you 14 have not conducted any modeling to replicate or 15 verify -- well, let me rephrase that. 16 Have you conducted any modeling -- 17 formation pressure modeling to replicate or verify the 18 applicant's new assumed cone of influence of 750 feet? 19 A You mean during my technical review? 20 Q At any point even up until today. 21 A Yes. 22 Q You have conducted that modeling? 23 A Yes. 24 Q And when was that done? 25 A Over the weekend.</p>	<p style="text-align: right;">Page 1190</p> <p>1 400-foot thickness of Zone 2. 2 Q And so if I understand your testimony 3 correctly, as far as thickness assumptions and a 4 pressure model is concerned, in the analytical 5 solution that you ran, the PRESS2 model, it's 6 appropriate to consider what the applicant proposes as 7 an injection reservoir thickness of 145 feet that then 8 beyond a fault displaces into an injection reservoir 9 of 401 feet; it's appropriate for you to account for 10 that in an analytical solution as an overall injection 11 thickness of 546 feet. 12 A Yes. The PRESS model doesn't have the 13 capability -- the PRESS model assumes a homogenous 14 reservoir, and it can only accept one value for the 15 parameters. 16 Q Okay. You were present for the testimony of 17 Mr. Grant yesterday evening, if I recall. Is that 18 correct? 19 A Yes. 20 Q And so were you able to understand his 21 ultimate concerns regarding the lack of, I'll call it, 22 safety checks or his concerns that there are no -- 23 they're not the same safety checks in place with 24 respect to what would be WDW-410 as there would be if 25 it were a brand new well?</p>

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<p style="text-align: right;">Page 1191</p> <p>1 A I heard his concerns. Is that what you 2 asked? 3 Q Yes, ma'am. 4 A I heard his concerns. 5 Q Okay. And did you understand his concerns to 6 be that with respect to the well that would be 7 permitted as WDW-410, that there is not a requirement 8 in TCEQ rules that that well be required to be 9 perforated before it's put into operation and that 10 those -- that new perforated injection interval be 11 subject to fall-off testing by the Commission before 12 the well is put into operation? 13 A I heard that that was Phil Grant's concern. 14 Q Okay. And did you also understand his 15 concerns that a fall-off test that might be required 16 by the agency probably, in his opinion, would not 17 require a radius of investigation that would extend 18 far enough to determine, with any amount of 19 reliability, whether the fault to the south is a 20 transmissive pressure -- is transmissive to pressure 21 or acts as a pressure barrier? 22 A I didn't interpret his testimony that way. 23 Q Okay. Did you hear his testimony regarding 24 his concerns with the transmissive nature of the 25 faults to the south, specifically the east-west fault</p>	<p style="text-align: right;">Page 1193</p> <p>1 at any time the operator cannot assure the continuous 2 attainment of the performance standard in 331.62(5) of 3 this title (relating to Construction Standards), the 4 Executive Director may require a corrective action 5 plan and compliance schedule. The operator must 6 demonstrate compliance with the performance standard, 7 as a condition for receiving approval of continued 8 operation of the well. The Executive Director also 9 may require permit changes to provide for additional 10 testing and/or monitoring of the well to insure the 11 continuous attainment of the performance standard. 12 The Commission" -- and then there's some other parts 13 that -- I'll just finish it. "The Commission may 14 order closure of the well if the operator fails to 15 demonstrate, to the Executive Director's satisfaction, 16 that the performance standard is satisfied." 17 Q Would you agree that based on your 18 understanding of how that rule operates, that this is 19 a rule that leaves the issue in the discretion of the 20 Executive Director? 21 A I believe the Executive Director has 22 discretion on this subject. 23 Q Okay. What I'm curious to know, if there's a 24 rule that you can point to -- and let's do this: 25 Since there's a cross-reference to 331.62(5), can you</p>
<p style="text-align: right;">Page 1192</p> <p>1 that lies approximately 4,400 feet to the south of 2 well WDW-315? 3 A I heard his testimony. 4 Q Okay. And did you understand him to say that 5 there was a way, through fall-off testing, if 6 conducted under the appropriate parameters, to 7 determine with some reliability whether that fault is, 8 in fact, transmissive to pressure or whether it acts 9 as a pressure boundary? 10 A Yes. 11 Q Okay. Do I understand your position to be 12 that the Commission's rules adequately account for 13 Mr. Grant's concerns as they exist today? 14 A I believe they do. 15 Q Can you specifically identify for me the TCEQ 16 rules that would require TexCom to perforate all 17 145 feet of the proposed injection interval before 18 WDW-410 is placed into operation? 19 A There's a provision in the permit that 20 incorporates the application by reference, and that 21 would be a requirement. Also, I think in the rules -- 22 well, let me look in the rules a little bit. 23 Q Please do. 24 A One applicable rule is 331. -- I think it's 25 (b) -- 331.44(b)(7) that requires -- I'll read it, "If</p>	<p style="text-align: right;">Page 1194</p> <p>1 explain for me the applicability of 331.62(5) here? 2 A It's titled the "Construction performance 3 standard." 4 Q Okay. Are you able to find 331.62(5)? 5 A Yes. It's 62, parentheses, (5). 6 Q Correct. Would you mind going ahead and 7 reading that rule into the record? 8 A "All Class" -- "Construction performance 9 standard. All Class I wells shall be cased and all 10 casings shall be cemented to prevent the movement of 11 fluids along the borehole into or between USDWs or 12 freshwater aquifers, and to prevent movement of fluids 13 along the borehole out of the injection zone." 14 Q Is there any understanding -- I'm curious 15 whether or not this provision, you believe, would 16 apply to requiring TexCom to add perforations to 17 WDW-410 before it's put into operation. 18 A This particular rule? 19 Q Yes, ma'am. 20 A Not in this particular rule. 21 Q Okay. And so let me -- what I'm trying to 22 accomplish here is -- if I understand your position, 23 is you believe that Mr. Grant's concerns about the 24 requirement of fall-off testing are addressed in the 25 rules. And I'm trying to understand which rules you</p>

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<p style="text-align: right;">Page 1195</p> <p>1 believe would require TexCom to perforate their wells 2 and -- before the well is put into operation and then 3 subject that new injection reservoir to fall-off 4 testing and scrutiny by the Commission before the well 5 is put into operation. 6 A Could you please repeat the question? 7 Q Sure. Sure. Let's just break it down. Can 8 you point me to a rule that would require TexCom to 9 add the perforations that they've proposed to add -- 10 to add those perforations before the well is allowed 11 to be put into operation? And by "the well," I'm 12 specifically referring to what would become WDW-410. 13 A I believe there is a rule that says that a 14 permittee has to construct and operate their well in 15 compliance with the application that they have 16 submitted and that has been approved. I'm still 17 looking for that rule. 18 (Brief Pause) 19 Q (By Mr. Hill) Let me ask you this, 20 Ms. Hoffman, and maybe we can speed this along a 21 little bit. Do you understand that TexCom would be 22 required under the rules -- under the TCEQ rules to 23 file a completion report before WDW-410 is allowed to 24 be operational? 25 A That is my assumption based on the reporting</p>	<p style="text-align: right;">Page 1197</p> <p>1 completion versus a workover? 2 A I don't -- you're asking to differentiate 3 between a well completion and a work -- I see. I 4 think I under -- well, as a new permit, a newly issued 5 permit on a well that is currently not permitted, I 6 think it could be justified that it falls in the 7 category of a new well. 8 Q A new well that has already been completed. 9 Correct? 10 A It -- well, it's a new permit. 11 Q Okay. But if I read the rule correctly, the 12 rule relates to wells and not necessarily -- relates 13 to well completion, not necessarily to permit 14 issuance. Is that your understanding of the rule? 15 A (No response) 16 Q Is it possible -- 17 A It's -- 18 Q I'm sorry. Go ahead and answer. 19 A Now I've lost my train -- 20 Q Okay. Let me ask you this: Is it possible 21 that 311.65(a) Sub (1) might not apply to WDW-410? 22 A I suppose it could be argued either way. 23 Q Okay. 24 A It was my assumption that it would apply. 25 Q Okay. Would you personally be responsible</p>
<p style="text-align: right;">Page 1196</p> <p>1 requirements, the reporting requirements under 331.65. 2 Q And are you referring specifically to 3 333.65(a) Sub (1)? 4 A Yes. 5 Q Do you recall when WDW-315 was completed? 6 A I'm not -- I don't clearly remember the year. 7 Q Has it been completed within -- would it have 8 been completed within 90 days before TexCom could put 9 the well into operation? 10 A I'm sorry. I -- are you asking about 11 WDW-315? 12 Q 315 or 410. I'm using those terms 13 interchangeably, and I don't mean to do it in a way 14 that confuses you. But if I understand correctly, 15 WDW-315 has already been drilled. Is that your 16 understanding? 17 A Yes. 18 Q And as a technical matter, the well has been 19 completed, has it not? 20 A Yes. 21 Q In fact, a completion report has already been 22 submitted to the TCEQ on WDW-315, is that not correct? 23 A Yes. 24 Q Is there anything that TexCom proposes to do 25 in their application that would qualify that well as a</p>	<p style="text-align: right;">Page 1198</p> <p>1 for enforcing 331.65(a)(1) against TexCom and ensuring 2 that a fall-off test is conducted before the well is 3 put into operation? 4 A They state in their application that they 5 will -- once permits are issued, they will recomplete 6 the well and then perform testing, which, as I recall 7 in their procedures, calls for a pressure fall-off 8 test along with a mechanical integrity test. 9 Q You, personally, would not be responsible for 10 enforcing 331.65(a)(1) -- let me use a different term. 11 You, personally, would not be 12 responsible for ensuring that TexCom was bound to 13 331.65(a) (1) if indeed it's determined that for some 14 reason what they're proposing to do to the well would 15 be a completion, and, thus, would subject them to that 16 particular rule, or would that responsibility be left 17 to somebody else at the Commission? 18 A I may be part of the process, but it wouldn't 19 be my ultimate -- my ultimate task. 20 MR. HILL: Okay. Thank you, 21 Ms. Hoffman. That's all of the questions I have. 22 I pass the witness. 23 JUDGE WALSTON: Aligned Protestants 24 Montgomery County and City of Conroe. 25 MS. STEWART: Thank you, Your Honor.</p>

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<p style="text-align: right;">Page 1199</p> <p>1 CROSS-EXAMINATION</p> <p>2 BY MS. STEWART:</p> <p>3 Q Good morning, Ms. Hoffman.</p> <p>4 A Good morning.</p> <p>5 Q My name is Julie Stewart. I represent the</p> <p>6 Aligned Protestants Montgomery County and City of</p> <p>7 Conroe. I have a few questions as -- basically,</p> <p>8 follow-up on the documents you've testified that you</p> <p>9 either prepared or assisted in preparing in your</p> <p>10 review of the UIC permit applications.</p> <p>11 The first document I'd like to ask you</p> <p>12 about is the technical summary and Executive</p> <p>13 Director's preliminary decision marked as ED Exhibit</p> <p>14 11. On Page 2 of that document, I have a question</p> <p>15 regarding a statement that's contained in that</p> <p>16 category titled "technical information." The</p> <p>17 statement is "Records of all known artificial</p> <p>18 penetrations within the area of review were examined."</p> <p>19 And my specific question is: How was this conclusion</p> <p>20 reached?</p> <p>21 A TexCom, in their application, describes the</p> <p>22 protocol they used to identify wells and artificial</p> <p>23 penetrations in the area of review, and they supplied</p> <p>24 copies of those records in the application.</p> <p>25 MR. RILEY: Ms. Stewart, I'm sorry to</p>	<p style="text-align: right;">Page 1201</p> <p>1 Also, in doing my review, I relied on a</p> <p>2 study that was done by Dupont in Orangefield, Texas,</p> <p>3 regarding borehole closure, and I relied on that as --</p> <p>4 in determining that abandoned boreholes in the Gulf</p> <p>5 Coast area would not be conduits for migration of</p> <p>6 fluids in this application.</p> <p>7 Q The information you relied on independently</p> <p>8 in your review would not be considered information</p> <p>9 that was submitted by TexCom as stated in this</p> <p>10 technical summary and preliminary decision. Correct?</p> <p>11 A Correct.</p> <p>12 Q The explanations that have been given by</p> <p>13 TexCom regarding the cone of influence you just</p> <p>14 mentioned that have occurred during the course of this</p> <p>15 hearing and then your own independent modeling</p> <p>16 concerning the cone of influence, have those</p> <p>17 explanations and your own independent modeling changed</p> <p>18 the conclusions that you've reached in this technical</p> <p>19 summary? Has that conclusion changed at all?</p> <p>20 A The -- specifically, what part of the</p> <p>21 conclusion?</p> <p>22 Q The second sentence, that information</p> <p>23 submitted by TexCom demonstrates that all wells</p> <p>24 identified were properly constructed, plugged or</p> <p>25 abandoned to prevent migration of waste from the</p>
<p style="text-align: right;">Page 1200</p> <p>1 interrupt. Could you keep your voice up a little bit?</p> <p>2 I'm having trouble hearing down this way.</p> <p>3 MS. STEWART: Yes.</p> <p>4 MR. RILEY: Thank you.</p> <p>5 MS. STEWART: Is this better?</p> <p>6 MR. RILEY: That's much better. Thank</p> <p>7 you.</p> <p>8 Q (By Ms. Stewart) Aren't there a number of</p> <p>9 wells located within the area of review which have no</p> <p>10 records from the Railroad Commission?</p> <p>11 A There are.</p> <p>12 Q Could you also explain how the conclusion was</p> <p>13 reached that information submitted by TexCom</p> <p>14 demonstrates that all wells identified within the area</p> <p>15 of review were properly constructed, plugged or</p> <p>16 abandoned to prevent migration of waste from the</p> <p>17 injection zone?</p> <p>18 A In their application, they demonstrated that</p> <p>19 the cone of influence -- this is in the application</p> <p>20 that I reviewed, the cone of influence was very small,</p> <p>21 around -- basically, I think around 150 feet, and that</p> <p>22 the wells within that -- well, they gave an</p> <p>23 explanation in the course of this hearing regarding</p> <p>24 the depth of some of those wells for which data wasn't</p> <p>25 available.</p>	<p style="text-align: right;">Page 1202</p> <p>1 injection zone. Has that conclusion changed?</p> <p>2 A I would more accurately say that information</p> <p>3 demonstrates that artificial penetrations will not</p> <p>4 serve as conduits for migration of, formation or</p> <p>5 wastewater into USDWs.</p> <p>6 Q Okay. Thank you. I have just a couple of</p> <p>7 questions about another document that you prepared</p> <p>8 based on your site visit. It's marked as ED-5, the</p> <p>9 memorandum. Could you please explain the purpose of a</p> <p>10 site inspection?</p> <p>11 A The purpose of a site inspection is stated in</p> <p>12 the Texas Water Code Section 27.016.</p> <p>13 Q And that is to?</p> <p>14 A I need to -- I want to read from --</p> <p>15 specifically, from that section of the water code.</p> <p>16 Q Okay.</p> <p>17 A The Texas Water Code Section 27.016 is titled</p> <p>18 "Inspection of Well Location."</p> <p>19 "On receiving an application for a</p> <p>20 permit, the Executive Director shall have an</p> <p>21 inspection made of the location of the proposed</p> <p>22 disposal well to determine the local conditions and</p> <p>23 the probable effect of the well and shall determine</p> <p>24 the requirements for the setting of casing, as</p> <p>25 provided in Section 27.051," and so forth "of this</p>

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<p style="text-align: right;">Page 1203</p> <p>1 code."</p> <p>2 Q Okay. Thank you. When you personally made</p> <p>3 the site inspection to determine the local conditions,</p> <p>4 what were you looking for as far as criteria in your</p> <p>5 examination of the site?</p> <p>6 A Our team doesn't have a lot of specific</p> <p>7 criteria to go on in interpreting this law. However,</p> <p>8 when I -- I look to see that it appeared to be an</p> <p>9 accessible location where equipment could be brought</p> <p>10 in to drill the new wells.</p> <p>11 Q I noticed in your memorandum of the site</p> <p>12 visit you had mentioned, as you just testified, there</p> <p>13 would be acceptable access from Creighton Road to</p> <p>14 bring in the necessary equipment to drill the wells.</p> <p>15 Would it not be part of your consideration in the</p> <p>16 inspection to look at whether there would be</p> <p>17 acceptable access for the trucks that would be coming</p> <p>18 in to offload waste?</p> <p>19 A That's not something specified in the</p> <p>20 statute.</p> <p>21 Q And as far as the part of the statute that</p> <p>22 asks the Executive Director for you to determine the</p> <p>23 probable effect of the well, what criteria are you</p> <p>24 looking at to make that determination?</p> <p>25 A Let me back up and elaborate on my answer to</p>	<p style="text-align: right;">Page 1205</p> <p>1 and ask you one last follow-up question.</p> <p>2 That conclusion that was reached about</p> <p>3 the wells being properly plugged to prevent migration</p> <p>4 of waste, was that really an assumption or conclusion</p> <p>5 based on -- let me rephrase that.</p> <p>6 Was that statement really an assumption</p> <p>7 or a conclusion that was based on a review of the</p> <p>8 records for all the wells that were available?</p> <p>9 A In the course of these proceedings, new</p> <p>10 information has been made available that -- such that</p> <p>11 I would more accurately make that statement as I</p> <p>12 mentioned earlier.</p> <p>13 MS. STEWART: Thank you, Ms. Hoffman.</p> <p>14 I pass the witness.</p> <p>15 JUDGE WALSTON: I just have one quick</p> <p>16 clarifying question.</p> <p>17 CLARIFYING EXAMINATION</p> <p>18 BY JUDGE WALSTON:</p> <p>19 Q Is this Dupont Orangefield study, is that</p> <p>20 part of the application or in the record anywhere, or</p> <p>21 is this just something you have access to?</p> <p>22 A It's something that I had in my files in my</p> <p>23 office that I've relied on in my reviews in some</p> <p>24 applicable situations. I don't -- it wasn't part of</p> <p>25 the application, as I recall, and it was available for</p>
<p style="text-align: right;">Page 1204</p> <p>1 the previous question. In the UIC program, typically</p> <p>2 we regard the underground injection well in the permit</p> <p>3 to apply from the wellhead down, and that's -- so</p> <p>4 that's a factor in how we interpret this statute.</p> <p>5 Q So you were focusing on the second part of</p> <p>6 that statute, which is the casing -- I don't have that</p> <p>7 in front of me, but the second part of the statute</p> <p>8 talks about the casings that be will be required. Is</p> <p>9 that correct?</p> <p>10 A Correct.</p> <p>11 Q You just read that.</p> <p>12 A And the drilling of the well.</p> <p>13 Q As far as the exhibit marked ED-3, did you</p> <p>14 have any part in responding to the public comments</p> <p>15 regarding traffic?</p> <p>16 A No. That was not part of the UIC -- it's not</p> <p>17 part of UIC.</p> <p>18 Q Did you have any part in responding to the</p> <p>19 public comments regarding whether the land in the area</p> <p>20 of the proposed wells is being used for residential or</p> <p>21 commercial purposes?</p> <p>22 A No.</p> <p>23 Q I'd like to go back to my original questions</p> <p>24 regarding the comments that were in the technical</p> <p>25 summary and Executive Director's preliminary decision</p>	<p style="text-align: right;">Page 1206</p> <p>1 discovery, but I don't know that it's in the record.</p> <p>2 JUDGE WALSTON: Okay. Thank you.</p> <p>3 Individual Protestants.</p> <p>4 MR. FORSBERG: Yes, Your Honor.</p> <p>5 CROSS-EXAMINATION</p> <p>6 BY MR. FORSBERG:</p> <p>7 Q Good morning, Ms. Hoffman.</p> <p>8 A Good morning.</p> <p>9 Q Is it Dr. Hoffman?</p> <p>10 A No.</p> <p>11 Q Ms. Hoffman. Okay. My name is Kevin</p> <p>12 Forsberg and I represent Individual Protestants in</p> <p>13 this matter. And I'm going to skip around a bit, so I</p> <p>14 apologize in advance. And as one -- just an initial</p> <p>15 question before I forget to ask it later: You said</p> <p>16 that you had done some reservoir modeling over the</p> <p>17 weekend. Is that correct?</p> <p>18 A Yes.</p> <p>19 Q What was the cone of influence that you</p> <p>20 determined?</p> <p>21 A I can't remember exactly. It was large, and</p> <p>22 for certain reasons, I --</p> <p>23 (Phone ringing)</p> <p>24 A -- do not think that it was --</p> <p>25 JUDGE WALSTON: Hang on just a second.</p>

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<p>1 (Brief Pause)</p> <p>2 JUDGE EGAN: Okay. They went away.</p> <p>3 (Laughter)</p> <p>4 A I think that the model that I have in my</p> <p>5 records was more realistic because the pressures at</p> <p>6 the wellbore were greater than but closer to those</p> <p>7 produced by the BOAST98 model. That's the reason I</p> <p>8 decided to stay with my original model, but the models</p> <p>9 are -- as Phil Grant explained, they're different</p> <p>10 types of models.</p> <p>11 Q (By Mr. Forsberg) Okay. And just to</p> <p>12 clarify -- and I'm going to ask this one more time:</p> <p>13 What was your finding with regards to the cone of</p> <p>14 influence over the weekend?</p> <p>15 A It was thousands of feet. I can't remember</p> <p>16 exactly.</p> <p>17 Q So you did some modeling over the weekend and</p> <p>18 you found a cone of influence of thousands of feet?</p> <p>19 A Yes.</p> <p>20 Q And you said that you had some concern</p> <p>21 regarding those -- that finding with regards to its</p> <p>22 reliability?</p> <p>23 A Yes.</p> <p>24 Q What did you do to go back and try and fix</p> <p>25 that or attempt other modeling to show that that was</p>	<p>1 results over the weekend were reliable or not?</p> <p>2 A I compared them with other information that</p> <p>3 has been presented in this hearing and I compared them</p> <p>4 with the applicant's model results and I decided that</p> <p>5 I think the model that I initially ran in my review</p> <p>6 was more reasonable.</p> <p>7 Q So you believe that your initial model which</p> <p>8 showed approximately 150 feet cone of influence --</p> <p>9 A Yes.</p> <p>10 Q -- is more reliable than the model based upon</p> <p>11 the information you learned in this hearing which</p> <p>12 resulted in a cone of influence of 5,000-some feet</p> <p>13 of --</p> <p>14 A I am not clear on what you mean by the term</p> <p>15 "reliable."</p> <p>16 Q Well, I'm trying to understand. Why are</p> <p>17 you -- why are you going back to your original cone of</p> <p>18 influence as being more acceptable or reliable than</p> <p>19 this one that you just did this past weekend?</p> <p>20 A Because the model I ran on the weekend had</p> <p>21 pressures at the wellbore that were way, vastly higher</p> <p>22 than those produced by the BOAST98 model. And, also,</p> <p>23 I think that the thickness of sands that are available</p> <p>24 for the waste is far in excess of 145 feet, and so I</p> <p>25 think that was, you know, too -- just too conservative</p>
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<p>1 not correct?</p> <p>2 A Well, I don't have -- I didn't have a basis</p> <p>3 for trying to -- I'm not sure what you're asking me.</p> <p>4 Q Well, if you suspected that your finding</p> <p>5 of -- let me go back one step.</p> <p>6 You say it was -- your cone of influence</p> <p>7 was thousands of feet?</p> <p>8 A Yes.</p> <p>9 Q Is that 5, 10, 15? Can you sort of --</p> <p>10 A I think it was between 5 and 10.</p> <p>11 Q Okay. So you did a modeling of the</p> <p>12 reservoir -- which you've done for other UIC wells in</p> <p>13 the past -- over the weekend based upon information</p> <p>14 you learned during this hearing?</p> <p>15 A Right.</p> <p>16 Q And it showed a cone of influence of</p> <p>17 5,000-plus feet?</p> <p>18 A Yes.</p> <p>19 Q Okay. Did you go back and try to input any</p> <p>20 other data to test the reliability of that finding?</p> <p>21 A Could you clarify what you mean by "inputting</p> <p>22 other data to test the reliability"?</p> <p>23 Q And let me just -- let me re-ask the question</p> <p>24 a different way.</p> <p>25 What did you do to determine if your</p>	<p>1 on the extreme. I think there's enough conservatism</p> <p>2 built into the model I ran before to be reasonable.</p> <p>3 Q Then why did you run the model over the</p> <p>4 weekend?</p> <p>5 A Just out of curiosity to see what the number</p> <p>6 would be.</p> <p>7 Q If you were considering a worst-case</p> <p>8 scenario, would it not be a concern to you that at</p> <p>9 least one model did show a cone of influence of</p> <p>10 5,000 feet?</p> <p>11 A It depends on the assumptions made and the</p> <p>12 parameters input into that model.</p> <p>13 Q But you made the model that resulted in the</p> <p>14 5,000-foot cone of influence.</p> <p>15 A Yes, but I thought that the value I put in</p> <p>16 for thickness was unreasonably small, not reflecting</p> <p>17 what will happen in reality when the well is used for</p> <p>18 injection.</p> <p>19 Q Then why did you not go back and redo the</p> <p>20 model with a different thickness?</p> <p>21 A Because I have no basis to choose another</p> <p>22 thickness. I have no basis to choose another</p> <p>23 thickness.</p> <p>24 Q What was the injection pressure that you used</p> <p>25 in your model over the weekend?</p>

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<p>1 A The injection pressure was not an input 2 parameter to that model. 3 Q Okay. And what pressure did you find at the 4 wellbore? 5 A Oh, I can't remember what it was. It was 6 vastly greater than what the BOAST98 model produced. 7 Q Why would you input those parameters if you 8 find them unreasonable? 9 A Which parameters are you asking about? 10 Q Well, you're saying that you have a wellbore 11 pressure that you believe was -- you inputted was much 12 higher than what it would actually be. 13 And I might be misunderstanding some of 14 your response. I know you have a lot of technical 15 background and I'm just trying to understand and 16 differentiate between a -- between this 5,000-foot 17 cone of influence that was very recent and this 18 150-foot cone of influence which was some time ago. 19 A That's the -- the reservoir thickness is the 20 only parameter I changed between what I used when I 21 initially did my review and what I did on the weekend. 22 JUDGE WALSTON: Can I ask a clarifying 23 question, just so I'm clear? 24 So this wellhead pressure that you said 25 was vastly higher than the BOAST, is that something</p>	<p>1 Q So it doesn't concern you at all even if it 2 includes, maybe, some parameters that you find 3 unreasonable that you should take into account this 4 new modeling of 5,000 feet cone of influence? 5 A Well, there are other considerations that 6 come into play here. What I'm thinking of is the fact 7 that my assumption has been that after -- if these 8 permits are issued, the applicant is bound by their 9 permit to reperforate the well and completely retest 10 the well with a pressure fall-off test and mechanical 11 integrity testing and turn in a completion report that 12 contains all of the information required by the rule. 13 I believe it's 331.65 for them -- it would be a 14 permittee at that time for the -- the permittee to 15 turn in the completion report containing all of the 16 information required in 331.65, and that includes -- 17 that includes, in Item No. (a)(1)(I), includes "the 18 calculated area of review and cone of influence based 19 on data obtained during logging and testing of the 20 well and the formation, and where necessary, revisions 21 to the information submitted under 331.121 of this 22 title (relating to Class I Wells)." 23 So in my mind, that concern is mitigated 24 by this post-permitting testing and reporting that 25 will be done and that will be required. That</p>
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<p>1 you input or is that a result of the -- 2 A It was a result. 3 JUDGE WALSTON: Okay. I understand. 4 A It was a result. And when I looked at 5 that -- it was a result. 6 MR. FORSBERG: Thank you, Your Honor. 7 Q (By Mr. Forsberg) As you sit here today, do 8 you believe the cone of influence is 150 feet? 9 A I believe that's a reasonable assumption 10 based on the modeling I had access -- I -- the model I 11 have access to use. 12 Q But you'd also agree that you have a model to 13 use that showed 5,000 feet? 14 A By varying the input into the model. 15 Q Okay. So the cone of influence is somewhere 16 between 150 and 5,000? 17 A It's possible that that's the case, depending 18 on what parameters a person inputs into a model. 19 Q And we don't have an exact picture of 20 everything underground. 21 A That's true. 22 Q Would it not be safe and within the goal or 23 mission statement of TCEQ to be most protective of 24 underground sources of drinking water? 25 A We want to be protective, yes.</p>	<p>1 mitigates the uncertainty about the extent of the cone 2 of influence. 3 Q So just to try and understand, is it your 4 testimony that TexCom should spend millions of dollars 5 preparing the site and then figure out if it works or 6 not? 7 A I'm sorry. I don't understand the question. 8 Q Well, the statute you just read suggests that 9 after the site is up and running, that they can 10 provide test results of what occurs. Correct? 11 A No. 12 Q Okay. 13 A My assumption, according to what I read in 14 their application, is that once they receive permits, 15 they would reperforate the well and retest the well, 16 and our agency requires a completion report for new 17 wells. Then it's by assumption that that's applicable 18 to these wells, all four of these wells. 19 Q Okay. You're -- obviously, you're not going 20 to reperforate a well that doesn't exist. You're 21 talking about reperforating the one well that exists 22 and then -- 23 A Right, and then -- 24 Q -- test on the new wells. 25 A That's right.</p>

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<p>1 Q Okay.</p> <p>2 A Each of -- all of the wells at some point in</p> <p>3 time would have to have a completion report.</p> <p>4 Q Could the model you did over the weekend --</p> <p>5 even if unlikely, could it be correct?</p> <p>6 A I think it's unrealistic.</p> <p>7 Q Okay. And I want to know --</p> <p>8 A For the configuration that this well will</p> <p>9 have after it's reperforated.</p> <p>10 Q So there's a zero percent chance that your</p> <p>11 model this weekend could be correct?</p> <p>12 A I wouldn't say zero.</p> <p>13 Q Okay. So there is a chance that your</p> <p>14 modeling over the weekend showing 5,000 feet cone of</p> <p>15 influence is correct. It may be an unlikely chance,</p> <p>16 but it could be.</p> <p>17 A It could be possible.</p> <p>18 Q You said that you -- that 1,250 -- I think</p> <p>19 the 1,250 psi pressure for which TexCom is seeking a</p> <p>20 permit played no part in your modeling.</p> <p>21 A That has to do with maximum allowable surface</p> <p>22 injection pressure.</p> <p>23 Q Okay. And I'm just clarifying, that doesn't</p> <p>24 have anything to do with the modeling --</p> <p>25 A It's not one of the input parameters into the</p>	<p>1 Q Okay. How many well records have you looked</p> <p>2 at in regards to the Conroe oil field when considering</p> <p>3 this application?</p> <p>4 A I went through all of them.</p> <p>5 Q All -- "all" meaning how many?</p> <p>6 A Well, I went through -- there were three -- I</p> <p>7 believe, if I'm not mistaken, there were three volumes</p> <p>8 of records submitted, and I did go through them all.</p> <p>9 Q Okay. And it's your testimony, in your</p> <p>10 experience, that there's no way that even with a</p> <p>11 5,000-foot cone of influence any of that fluid could</p> <p>12 ever come up through a well into an underground source</p> <p>13 of drinking water?</p> <p>14 A Well, that's an extreme statement that I</p> <p>15 couldn't make.</p> <p>16 Q So it's possible that they could serve as a</p> <p>17 conduit into the underground source of drinking water</p> <p>18 for waste material?</p> <p>19 A I don't believe they will.</p> <p>20 Q I know you don't believe they will, but could</p> <p>21 it?</p> <p>22 A Under some undisclosed -- could you rephrase</p> <p>23 your question? I'm not clear what you're asking.</p> <p>24 Q Is it possible -- and I understand that you</p> <p>25 don't believe it would, but is it possible that these</p>
Page 1216	Page 1218
<p>1 pressure build-up model. The reservoir pressure is an</p> <p>2 input parameter.</p> <p>3 Q Okay. And if the model you did was correct</p> <p>4 and you have a 5,000-plus cone of influence -- foot</p> <p>5 cone of influence -- how many oil wells are in that</p> <p>6 5,000-plus foot cone -- potential cone of influence?</p> <p>7 A In this area, there would be a number -- a</p> <p>8 large number -- a number.</p> <p>9 Q Have you considered the effect on all of</p> <p>10 those wells in considering, you know, the application</p> <p>11 of TexCom?</p> <p>12 A I think that the artificial penetrations will</p> <p>13 not serve as conduits for pollution of USD -- for</p> <p>14 migration of fluids out of the injection zone and into</p> <p>15 USDWs due to injection of waste.</p> <p>16 Q You don't think that could ever happen</p> <p>17 anywhere or just because of the situation in this</p> <p>18 field?</p> <p>19 A Because of the situation that I -- in this</p> <p>20 field.</p> <p>21 Q Okay. Would you agree with me that there are</p> <p>22 hundreds of wells within 5,000 feet of the proposed</p> <p>23 injection wells?</p> <p>24 A I can't -- I would have to look at the map</p> <p>25 and the records to know for sure.</p>	<p>1 abandoned oil wells or plugged oil wells or wellbores</p> <p>2 could serve as a conduit in the Conroe oil field for</p> <p>3 waste streams into an underground source of drinking</p> <p>4 water?</p> <p>5 A Are you asking --</p> <p>6 Q I'm just asking if it's possible.</p> <p>7 A As a result of injection into these wells?</p> <p>8 Q Yes.</p> <p>9 A I don't think so.</p> <p>10 Q It's impossible?</p> <p>11 (Brief Pause)</p> <p>12 JUDGE WALSTON: If you can -- can you</p> <p>13 answer the question?</p> <p>14 A Pardon?</p> <p>15 JUDGE WALSTON: Can you answer the</p> <p>16 question?</p> <p>17 A I can -- I --</p> <p>18 (Brief Pause)</p> <p>19 A I just -- the fact that you've used, you</p> <p>20 know, the extreme terminology "impossible, ever," you</p> <p>21 know, "never," I can't agree that under any</p> <p>22 circumstances, ever, never could it be possible.</p> <p>23 Q (By Mr. Forsberg) Okay. So I'm just saying:</p> <p>24 Even under some unlikely scenario, there is a</p> <p>25 theoretical possibility at least that these abandoned</p>

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<p style="text-align: right;">Page 1219</p> <p>1 oil wells could serve as a conduit for waste material 2 into an underground source of drinking water? 3 A "Theoretical"? What do you mean by that? 4 Q Well, I'm just -- 5 JUDGE WALSTON: I think you're kind of 6 beating a dead horse. I think you got the answer you 7 wanted, and maybe you ought to move on. 8 MR. FORSBERG: Okay. 9 JUDGE WALSTON: She said it's possible. 10 MR. FORSBERG: Okay. 11 Q (By Mr. Forsberg) Do you have your prefiled 12 testimony in front of you? 13 A Yes. 14 Q Before -- are you planning on doing any other 15 modeling with regards to these -- this application? 16 A No, not at this time. 17 Q Could you turn to Page 4 of your prefiled 18 testimony, please? 19 A (Witness complied) 20 Q On -- I believe it identifies a number of 21 your job functions at TCEQ, and, particularly, I was 22 looking at No. 5 where you discuss "Coordinate 23 rulemaking." 24 A Yes. 25 Q Can you just explain to me what you mean by</p>	<p style="text-align: right;">Page 1221</p> <p>1 MR. FORSBERG: Thank you, Your Honor. 2 Q (By Mr. Forsberg) Ms. Hoffman, before our 3 break I believe we were on the topic, generally, of 4 Page 4 of your testimony and you discussed some of 5 your duties with regards to coordinating rulemaking. 6 A Yes. 7 Q In your experience, when does TCEQ normally 8 institute a rulemaking change? 9 A It can be done in response to legislation or 10 it can be done if someone petitions our agency for a 11 rulemaking or it can also be initiated within our -- 12 within the TCEQ. 13 Q Okay. So is that something, for example, you 14 would have the ability to do or to at least initiate 15 the process if you so chose to do so? 16 A Via my -- via input to my team leader, I 17 suppose I could be. Yes, uh-huh. 18 Q Okay. Do rulemaking changes, in your 19 experience, ever result from opinions by appellate 20 courts that interpret legislation? 21 A I imagine that is the case. 22 Q Okay. Have you looked into the existence of 23 any Class II wells in Montgomery County? 24 A No. 25 Q Okay. Can you identify what a Class II well</p>
<p style="text-align: right;">Page 1220</p> <p>1 "Coordinate rulemaking"? 2 A I've been involved in a few rulemaking 3 projects related to underground injection control. 4 There was some rulemaking related to a prohibition of 5 hazardous waste disposal in salt dome caverns that I 6 was involved in and there was rulemaking implementing 7 new rules for pre-injection units associated with 8 non-hazardous noncommercial injection wells that I was 9 involved with, and, also, some legislation that passed 10 in the last legislative session about disposal of 11 desalination concentrated water treatment residuals. 12 JUDGE WALSTON: How much longer do you 13 have? 14 MR. FORSBERG: I have quite a bit. 15 JUDGE WALSTON: Okay. So why don't we 16 go ahead and take our morning break, and we'll resume 17 at five 'till 11:00. 18 (Recess: 10:42 a.m. to 11:00 a.m.) 19 JUDGE WALSTON: I have one housekeeping 20 matter, the court reporter informed me that when I was 21 admitting ED exhibits, I did not mention ED-11. So 22 that exhibit is also admitted. 23 (ED Exhibit No. 11 admitted) 24 JUDGE WALSTON: Mr. Forsberg, you may 25 continue.</p>	<p style="text-align: right;">Page 1222</p> <p>1 is in relation or as compared to a Class I well? 2 A Class II wells are wells that are involved 3 with exploration and production of oil and gas. 4 They're -- the Railroad Commission has jurisdiction 5 over Class II wells. 6 Q Okay. Are there more regulations and 7 requirements for Class II wells or Class I wells in 8 your experience? 9 A For Class I wells. 10 Q So it's much easier to get a permit for a 11 Class II well. Is that fair? 12 A Yes, typically. 13 Q Okay. Why is that the case? 14 A Because -- I'm not thoroughly familiar with 15 their regulations, but it's my understanding that 16 their regulations are not as stringent as those for 17 Class I wells. 18 Q Okay. Is that at all related to the 19 materials being injected into the wells? 20 A Could you please rephrase your question? 21 Q In your experience -- I think you testified 22 that Class I permits are more difficult to obtain than 23 a Class II permit, and, in your experience, is that at 24 all related to the types of materials that are being 25 injected into the wells?</p>

18 (Pages 1219 to 1222)

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<p style="text-align: right;">Page 1223</p> <p>1 A Into the Class II wells?</p> <p>2 Q Yes.</p> <p>3 A I really don't know. I don't know all the</p> <p>4 reasons for -- as to how the Class II wells -- well</p> <p>5 regulations were developed. I really don't have</p> <p>6 enough background in that subject to give a good</p> <p>7 answer.</p> <p>8 Q Okay. That's fair enough.</p> <p>9 When you considered the TexCom</p> <p>10 application and reviewed the TexCom application -- or</p> <p>11 applications that we're talking about today, is it</p> <p>12 fair to say, then, the existence or nonexistence of</p> <p>13 Class II wells in Montgomery County played no role in</p> <p>14 your decision-making?</p> <p>15 A That's true as far as -- only in regards to</p> <p>16 artificial penetrations the Class II wells were --</p> <p>17 Class II wells part of my consideration.</p> <p>18 Q Okay. And can you expand on what you mean by</p> <p>19 that?</p> <p>20 A By "artificial penetrations"?</p> <p>21 Q Or how did they play -- why did that part of</p> <p>22 it play a part in your review of this application?</p> <p>23 A Well, with regard to the area of review and</p> <p>24 with regard to reviewing the AOR -- area of review</p> <p>25 requirements.</p>	<p style="text-align: right;">Page 1225</p> <p>1 that those wells did not play a part in your review of</p> <p>2 the TexCom application?</p> <p>3 A Well, the ones that -- any that would have</p> <p>4 been identified on the area of review map as such</p> <p>5 wells would have played a part in the review.</p> <p>6 Information that was submitted in the application in</p> <p>7 regard to those wells would have -- I guess I want to</p> <p>8 back up a little bit to when I said I wasn't aware --</p> <p>9 I only became aware of such wells in the course of</p> <p>10 this proceeding. I know that there are Class II</p> <p>11 injection wells in the area. Yes. I knew that.</p> <p>12 Q Okay.</p> <p>13 A I just became aware in this hearing -- in</p> <p>14 this hearing, I believe, it was -- Dr. Langhus was</p> <p>15 aware of a specific number of the wells.</p> <p>16 Q Do you recall what that number was?</p> <p>17 A I believe it was 50-something.</p> <p>18 Q Okay. Do you have any personal knowledge of</p> <p>19 what the status of any of those wells is?</p> <p>20 A No.</p> <p>21 Q Is it fair to say that just because a permit</p> <p>22 was issued on a well at some point in history that it</p> <p>23 may not be operational today?</p> <p>24 A Yes. If a permit was issued for a well at</p> <p>25 some point in history, it may not be operational</p>
<p style="text-align: right;">Page 1224</p> <p>1 Q Okay. Were there any Class II wells in the</p> <p>2 area of review?</p> <p>3 A Yes.</p> <p>4 Q How many?</p> <p>5 A Well, there are a large number.</p> <p>6 Q Okay.</p> <p>7 A A large number. I don't have an exact</p> <p>8 number.</p> <p>9 Q Did the existence of those wells make you</p> <p>10 more or less apt to approve the TexCom application or</p> <p>11 did they play no part at all?</p> <p>12 A They played a part in my review.</p> <p>13 Q Okay. Did you rely on them in making your</p> <p>14 ultimate decision in regards to the application that</p> <p>15 it met the rules and requirements of the TCEQ?</p> <p>16 A Well, I calculated the pressure that would be</p> <p>17 required to overcome mud if left in, say, a Class II</p> <p>18 abandoned borehole and then compared that pressure</p> <p>19 with the pressure build-up that was modeled in the</p> <p>20 reservoir to determine the cone of influence.</p> <p>21 Q Okay. Are there Class II underground</p> <p>22 injection wells in Montgomery County that are being</p> <p>23 used today?</p> <p>24 A I learned that in the course of this hearing.</p> <p>25 Q Okay. Is it safe or fair to agree, then,</p>	<p style="text-align: right;">Page 1226</p> <p>1 today.</p> <p>2 Q And, in fact, we don't know -- or you don't</p> <p>3 know, as you sit here today, how many operational</p> <p>4 Class II wells are in Montgomery County.</p> <p>5 A I don't know.</p> <p>6 Q And the number Mr. Langhus was referring to</p> <p>7 was the number of permits that had been issued at some</p> <p>8 point in the past. Is that your understanding?</p> <p>9 A I can't remember specifically whether he</p> <p>10 mentioned permits or operating wells.</p> <p>11 Q Okay. Are there other permits that, in your</p> <p>12 knowledge, are Class I wells in Montgomery County</p> <p>13 pending currently?</p> <p>14 A Not that I'm aware of. Not that I can think</p> <p>15 of at the moment anyway. I wouldn't necessarily have</p> <p>16 knowledge of all of the applications that are being</p> <p>17 reviewed -- you know, currently under review by our</p> <p>18 team.</p> <p>19 Q Correct. And I'm not asking you to</p> <p>20 speculate. I'm just asking you based on your</p> <p>21 knowledge.</p> <p>22 A Right.</p> <p>23 Q On Page 7 of your prefiled testimony -- if</p> <p>24 you could, turn to that, please.</p> <p>25 A (Witness complied)</p>

19 (Pages 1223 to 1226)

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<p>1 Q On Line 17, there's a question with regards 2 to sources of information you relied upon in 3 conducting your review of the application. Is that 4 correct? 5 A Yes. 6 Q One of the sources is a letter from the 7 Railroad Commission. Is that correct? 8 A Yes. 9 Q What is the purpose or how do you rely upon 10 the letter from the Railroad Commission? To what 11 extent? 12 A I rely on it to fulfill the statute in 27 -- 13 the statute -- if you want me to look for it, I'll 14 find it, but it's in Chapter 27 of the water code. 15 Q And you're certainly welcome to refer to it. 16 Let me ask you a follow-up question and maybe you can 17 answer it with or without referring to it. Is it just 18 the existence of the letter that is important or is 19 the content of the letter important as well? 20 A The content is also important. And I found 21 the statute. It's 27.015(a). 22 Q And why is the content important? 23 A Because the statute requires "A person making 24 application to the Commission for a disposal well 25 permit under this chapter shall submit with the</p>	<p>1 MR. FORSBERG: 62 is the one I'm going 2 to be referring to. And, specifically, Page 28 of 3 Exhibit 62. 4 Q (By Mr. Forsberg) Are you at TexCom Exhibit 5 62, Page 28? 6 A Yes. 7 Q Is this the letter from the Railroad 8 Commission that you were referring to in your prefiled 9 testimony? 10 A I believe it is. 11 Q Okay. Would you agree with me that the first 12 line of the letter says "The Railroad Commission staff 13 has reviewed your application received September 16, 14 2005 for your Class I injection wells"? 15 A Yes, pretty much. It -- 16 Q Off a word or -- 17 A Yes. 18 Q -- a preposition or two. 19 What's the date of the letter? 20 A The date of the letter is September 16th, 21 2005. 22 Q Based upon this letter, it appears that the 23 Railroad Commission received the application on 24 September 16th, 2005 and issued a letter of approval 25 on September 16th, 2005. Would you agree?</p>
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<p>1 application a letter from the Railroad Commission 2 concluding that drilling or using the disposal well 3 and injecting industrial and municipal waste into the 4 subsurface stratum will not endanger or injure any 5 known oil or gas reservoir." 6 Q Would you agree with me that the purpose of 7 providing that letter to TCEQ is to advise TCEQ that 8 some kind of investigation was done and that you don't 9 have to worry about that part of it? 10 A Well, it's my understanding that the Railroad 11 Commission does its evaluation to fulfill the 12 requirement of the statute. 13 Q And if they hadn't done that part of it, then 14 you couldn't proceed forward with the application 15 process? 16 A That's true. 17 Q And so your -- TCEQ relies upon the Railroad 18 Commission to conduct its part just as you rely on the 19 applicant to do its part and TCEQ to do its part. 20 A That's true. 21 Q If you have available Volume 15 of applicant, 22 TexCom's, prefiled direct case. 23 A Volume 15? 24 Q Volume 15. It's Exhibits 62 and 63. 25 JUDGE EGAN: Exhibits what?</p>	<p>1 A That's what it appears. That is what 2 appears. 3 Q If you know, and if you do not -- I'm not 4 asking you to speculate about what the Railroad 5 Commission does, but based upon TCEQ's reliance of 6 this letter from the Railroad Commission, does it 7 cause you any concern that it appears that an 8 application was received on September 16th, 2005 and 9 then a letter issued on the same day? 10 A I really don't know enough about the Railroad 11 Commission's process and how efficient it is, how 12 readily available the information they may have needed 13 to do their evaluation was. I really don't have 14 enough information to speculate. 15 Q Okay. Fair enough. How long did you work on 16 these applications? 17 A The technical review was -- oh, I have it in 18 my prefiled testimony. It's something like six to 19 eight months. Something like that. Six or seven 20 months. 21 Q Does the Railroad Commission assign different 22 well numbers to these wells than TCEQ -- the 23 underground injection wells that are being proposed? 24 A I really don't know how -- you're talking 25 about these proposed four wells?</p>

20 (Pages 1227 to 1230)

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<p style="text-align: right;">Page 1231</p> <p>1 Q Yes.</p> <p>2 A Whether the Railroad Commission assigns</p> <p>3 different numbers to them?</p> <p>4 Q Correct.</p> <p>5 A I don't know.</p> <p>6 Q Okay. How does the TCEQ go about assigning</p> <p>7 numbers to wells?</p> <p>8 A We -- my knowledge of that is that when an</p> <p>9 application comes in -- my knowledge of the process is</p> <p>10 that as applications come in, they are assigned</p> <p>11 numbers by the people who do that kind of task. You</p> <p>12 know, as they come in, they're assigned WDW numbers as</p> <p>13 applications come in.</p> <p>14 Q Would that be after you receive the letter</p> <p>15 from the Railroad Commission or before?</p> <p>16 A Well, it's when -- I assume you're asking</p> <p>17 about a Class I injection well application that comes</p> <p>18 into our agency.</p> <p>19 Q Yes.</p> <p>20 A It's very early in the process when an</p> <p>21 application is received and logged into our system.</p> <p>22 Then I believe, right away, it receives a number.</p> <p>23 That's my understanding of the process. I don't have</p> <p>24 a role in it.</p> <p>25 Q Okay. Could you turn to Page 15 of your</p>	<p style="text-align: right;">Page 1233</p> <p>1 application, but I know that there are -- I mean, I</p> <p>2 assume that there's an underground source of drinking</p> <p>3 water.</p> <p>4 Q Okay. And I think we already established</p> <p>5 earlier that even under a theoretical approach there</p> <p>6 could be a pollution -- there could be polluting from</p> <p>7 this operation into the Catahoula aquifer. Even</p> <p>8 though you may not believe it's possible, there could</p> <p>9 be.</p> <p>10 A What mechanism is in mind behind your</p> <p>11 question?</p> <p>12 Q Any mechanism.</p> <p>13 A Could --</p> <p>14 Q Could there be pollution from this facility</p> <p>15 into the Catahoula aquifer?</p> <p>16 A Under -- are you asking a hypothetical</p> <p>17 question under any possible circumstances that one</p> <p>18 could think of?</p> <p>19 Q Yes.</p> <p>20 A I imagine that's true.</p> <p>21 Q Okay. So when you interpret this statute</p> <p>22 that says "could result in the pollution of an</p> <p>23 underground source of drinking water," you would</p> <p>24 agree, then, that under this situation in the</p> <p>25 application, as submitted by TexCom, there could be --</p>
<p style="text-align: right;">Page 1232</p> <p>1 prefiled testimony, please?</p> <p>2 A (Witness complied)</p> <p>3 Q You identify an operating -- operating</p> <p>4 requirements pursuant to 30 TAC Section 331.63. And,</p> <p>5 specifically, I'm looking at letter (a). It says,</p> <p>6 "All Class I wells shall be operated to prevent the</p> <p>7 movement of fluids that could result in the pollution</p> <p>8 of an underground source of drinking water and to</p> <p>9 prevent leaks from the well into unauthorized zones."</p> <p>10 Is that an exact word for word out from the statute?</p> <p>11 And you're welcome to verify.</p> <p>12 MR. RILEY: Counsel, I assume you mean</p> <p>13 rule. Correct?</p> <p>14 MR. FORSBERG: Yeah. Yeah.</p> <p>15 A Yes. I believe it is.</p> <p>16 Q (By Mr. Forsberg) Would you agree with me</p> <p>17 that the statute says "could result in the pollution</p> <p>18 of underground source of drinking water"?</p> <p>19 A Yes, the rule.</p> <p>20 Q Or the rule. I apologize. I keep referring</p> <p>21 to statute.</p> <p>22 Are you aware that there's an</p> <p>23 underground source of drinking water directly above</p> <p>24 the Jackson shale known as the Catahoula?</p> <p>25 A I didn't review in detail that part of the</p>	<p style="text-align: right;">Page 1234</p> <p>1 there could be a result of pollution of an underground</p> <p>2 source of drinking water?</p> <p>3 A Well, I think if you take this kind of an</p> <p>4 interpretation of the rules, there would never be any</p> <p>5 injection wells permitted any place.</p> <p>6 Q That wasn't my question. I'm not asking</p> <p>7 about other injection wells or whether -- or the</p> <p>8 practice of injecting wells. I'm just asking, based</p> <p>9 upon the words I see on paper -- and I think we've</p> <p>10 agreed on what those words are --</p> <p>11 JUDGE WALSTON: Okay. Why don't you go</p> <p>12 ahead and just ask her the question. Be clear.</p> <p>13 MR. FORSBERG: I'll move on. I think</p> <p>14 she's said enough on that.</p> <p>15 MR. RILEY: Objection to the editorial.</p> <p>16 JUDGE WALSTON: Overruled.</p> <p>17 Q (By Mr. Forsberg) When you reviewed the</p> <p>18 TexCom application, did you note anywhere that there</p> <p>19 was an increase in the reservoir pressure that could</p> <p>20 exceed the maximum allowable pressure?</p> <p>21 A In what part of the application are you --</p> <p>22 I'm sorry. I didn't entirely --</p> <p>23 Q Okay.</p> <p>24 A -- understand what you were referring to.</p> <p>25 Q Do you understand that there's a maximum</p>

21 (Pages 1231 to 1234)

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<p>1 allowable pressure --</p> <p>2 A Yes.</p> <p>3 Q -- with regards to mud plugs or pushing mud</p> <p>4 plugs up through abandoned wells?</p> <p>5 A I -- yeah. I -- you're -- I thought --</p> <p>6 Q And I should have prefaced the question</p> <p>7 better. I certainly agree.</p> <p>8 A Yes. I understand that there's a calculated</p> <p>9 pressure that would be required to displace a mud</p> <p>10 plug. Yes.</p> <p>11 Q Okay. And I think you testified earlier that</p> <p>12 was around 418, is what you calculated.</p> <p>13 A Yes.</p> <p>14 Q And what was the pressure increase shown by</p> <p>15 TexCom with regards to the injection of material?</p> <p>16 A I believe that their -- based on -- based on</p> <p>17 what they testified to in this hearing, I believe that</p> <p>18 was about 750 feet, is the radius at which an</p> <p>19 injection pressure of 418, 421 psi occurs.</p> <p>20 Q Okay.</p> <p>21 A If I'm understanding the question correctly.</p> <p>22 Q Do you recall a number 456 with regards to</p> <p>23 pressure in the TexCom application materials -- about</p> <p>24 an increase in pressure to 456 psi?</p> <p>25 A I'm not recalling that number at the moment.</p>	<p>1 Q And then they're given an opportunity to</p> <p>2 correct that?</p> <p>3 A Yes.</p> <p>4 Q How many opportunities to correct do they</p> <p>5 have?</p> <p>6 A Typically --</p> <p>7 Q Go ahead. I'm sorry.</p> <p>8 A In our normal team process at this time,</p> <p>9 typically two formal opportunities via notices of</p> <p>10 deficiency.</p> <p>11 Q Okay. Are you familiar with the waste</p> <p>12 compatibility requirement in the -- or instruction in</p> <p>13 the instructions for the application?</p> <p>14 A Yes.</p> <p>15 Q And it may be helpful to get a copy of the</p> <p>16 instructions in front of you. The copy I have is in</p> <p>17 Philip Grant's deposition testimony -- or -- I'm</p> <p>18 sorry -- the direct examination of Philip Grant, but</p> <p>19 there also may be another source.</p> <p>20 A Do you know where I would find it?</p> <p>21 Q Well, it's not that long. I can just read</p> <p>22 it, if that would be helpful.</p> <p>23 A Okay.</p> <p>24 Q And if it gets to be too cumbersome, then</p> <p>25 I'll find it -- we'll find it for you.</p>
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<p>1 I may not have understood your question.</p> <p>2 Q And I'm not going to belabor the point. I'm</p> <p>3 not. I'm probably not asking the question properly,</p> <p>4 so I'm just going to move on. It's a minor point.</p> <p>5 And I am switching gears here again.</p> <p>6 With regards to the application itself, is it</p> <p>7 important that the instructions to the application be</p> <p>8 followed?</p> <p>9 A Yes. It's important.</p> <p>10 Q I mean, for example, next Tuesday my kids are</p> <p>11 going to open up a bunch of packages and there's going</p> <p>12 to be instructions and I'm probably going to choose to</p> <p>13 ignore those instructions, and as a result, suffer</p> <p>14 hours of misery. When an applicant is going through</p> <p>15 their instructions for filling out this application,</p> <p>16 it's important that they follow each and every</p> <p>17 requirement carefully or their application will be</p> <p>18 denied. Correct?</p> <p>19 A Well, it's whether or not they comply with</p> <p>20 the rules that actually determines whether their</p> <p>21 application is denied.</p> <p>22 Q Okay. But if they don't follow the</p> <p>23 instructions, TCEQ can at some point point that out to</p> <p>24 them. Is that fair?</p> <p>25 A Yes.</p>	<p>1 JUDGE WALSTON: Where are you in</p> <p>2 Mr. Grant's testimony?</p> <p>3 MR. FORSBERG: Exhibit 11, Page 32 of</p> <p>4 32.</p> <p>5 JUDGE WALSTON: Just so the record is</p> <p>6 clear, that's Lone Star's Exhibit 11.</p> <p>7 MR. FORSBERG: Yes.</p> <p>8 Q (By Mr. Forsberg) Section X of the</p> <p>9 instructions is titled "Waste Compatibility" and the</p> <p>10 instructions --</p> <p>11 A I'm sorry. I may -- I think I'll be able to</p> <p>12 find it.</p> <p>13 Q Oh, okay.</p> <p>14 A Could you tell me the section or page again,</p> <p>15 please?</p> <p>16 Q Page 32 of 32, Exhibit 11.</p> <p>17 A Okay.</p> <p>18 Q Okay. The instruction is "Submit test</p> <p>19 results for determination of the compatibility of the</p> <p>20 proposed injection fluid with the formation, and</p> <p>21 formation fluids, at expected pressures and</p> <p>22 temperatures." Was that done in this case with</p> <p>23 regards to TexCom?</p> <p>24 A I'm sorry. I'm not -- I'm on Page 32 of 32</p> <p>25 in Section XI. Right?</p>

22 (Pages 1235 to 1238)

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<p style="text-align: right;">Page 1239</p> <p>1 Q Exhibit 11. And it's Paragraph, I guess, 10 2 or -- Roman, or X. 3 A Okay. You're asking about the test results 4 for determination of compatibility. 5 Q Yes. Were those submitted by TexCom? 6 A Those -- they submitted a discussion. 7 Testing was not done because the actual waste isn't 8 available yet. 9 Q Would you agree that there's a list of waste 10 that has been provided in the TexCom application? 11 A Yes. 12 Q Does this instruction -- and maybe I'm not 13 reading it properly. Does it make an exception for 14 when waste has not been brought into the facility yet? 15 MR. RILEY: You mean other than the next 16 sentence, Counsel? Is that what you're asking the 17 witness? 18 MR. FORSBERG: Actually, no, but thank 19 you for providing that information. 20 MR. RILEY: I was just curious. 21 Q (By Mr. Forsberg) Is there one well that's 22 constructed? 23 A Yes. 24 Q Okay. So I believe the second sentence is 25 inapplicable to the first well.</p>	<p style="text-align: right;">Page 1241</p> <p>1 MR. WILLIAMS: Objection, facts not in 2 evidence. I believe the existence of the well is 3 controlled by a negotiated settlement between TCEQ, 4 TexCom, the bank, and there may be a third party 5 involved, and that negotiated settlement is not in 6 evidence and so what can be permitted to do on that 7 well is not part of this hearing. 8 MR. FORSBERG: But I'm asking -- 9 JUDGE WALSTON: I'll overrule that 10 objection. And she can answer it if she can. If she 11 can't, she can't. 12 Can you answer the question? 13 A My answer was going to be that at this 14 time injection is prohibited into the well except for 15 the testing that's specified in the settlement 16 agreement. 17 Q (By Mr. Forsberg) Do the tests -- do the 18 tests require actual injection into the well? 19 A A mechanical integrity test or a pressure 20 fall-off test would require injection into the well. 21 Q But would a test for the determination of the 22 compatibility of proposed injection fluid with the 23 formation and formation fluids -- I mean, would that 24 be necessary for that? 25 A They would have to have the waste fluids.</p>
<p style="text-align: right;">Page 1240</p> <p>1 MR. RILEY: If it said "well," I would 2 agree with you, Counsel. It says "facility." 3 Q (By Mr. Forsberg) Is the -- the one well 4 that is constructed -- okay. Just -- we agree that 5 one well was constructed? 6 A Right. 7 Q And exists? 8 A Yes. 9 Q Could sampling be done with regards to 10 proposed materials with regards to that well, or 11 testing? 12 A It's -- I want to refer to the application to 13 make sure I don't misstate something that's in the 14 application, but -- I have to get the next volume, I 15 think. 16 (Brief Pause) 17 A I'm not finding Section X. 18 Q (By Mr. Forsberg) Well, let me just 19 backtrack, and maybe I can break it up here and make 20 it a little bit easier. 21 What about the existing well makes it 22 impossible for TexCom to provide test results for the 23 determination of the compatibility of the proposed 24 injection fluid with the formation and formation 25 fluids at expected pressures and temperatures?</p>	<p style="text-align: right;">Page 1242</p> <p>1 They would have to have samples of the waste fluids to 2 be tested. 3 Q But they know what the waste fluids are -- 4 correct -- because they listed them in the 5 application? 6 A They did, in general form. 7 Q Okay. And prior to opening a new well, is 8 any applicant ever going to have the exact waste 9 fluids available to them? Is that -- in your 10 experience, does that occur? 11 A No. 12 Q And I assume that this instruction is here 13 for a reason. 14 A Yes. 15 Q So TexCom could perform a testing for 16 compatibility of the proposed injection fluid with the 17 formation and formation fluids at expected pressures 18 and temperatures for the existing well? 19 A Are you suggesting that they could do the 20 second sentence here that is for unconstructed 21 facilities, that they actually could provide a 22 detailed proposal for compatibility testing following 23 completion of the well and retrieval of reservoir 24 fluid and cores? 25 Q No. And I'm not trying to suggest anything.</p>

23 (Pages 1239 to 1242)

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<p style="text-align: right;">Page 1243</p> <p>1 I'm simply asking: With regards to the first sentence 2 on the well that we have agreed is existing and 3 constructed -- I understand there's a word "facility" 4 in the second sentence, but I'm only looking at the 5 first sentence. Could TexCom do the testing for the 6 determination of compatibility of the proposed 7 injection fluid with the formation and formation 8 fluids at expected pressures and temperatures for the 9 existing well? 10 A If -- I suppose if they have samples 11 available, the tests could be run. If there are 12 samples of the formation fluids and the samples of the 13 formation from cores available, some tests, 14 potentially, could be run. 15 Q You understand that some core samples were 16 taken? 17 A Yes. 18 Q The second part of this sentence says "For 19 unconstructed facilities, provide a detailed proposal 20 for compatibility testing." Now, the word "facility" 21 is used, but you've already agreed that there's enough 22 of a facility there to do the test on the existing 23 well. 24 A Well, "facility" is defined in the rules. 25 Q I understand. And I'm just asking you</p>	<p style="text-align: right;">Page 1245</p> <p>1 testing performed on the existing well prior to 2 issuing the permits? 3 A If it were feasible. 4 Q Okay. And what would require it to be 5 feasible? 6 A Access to core samples and formation fluids 7 and proper samples of the waste that's proposed to be 8 injected. 9 Q Is that everything? 10 A Everything I can think of at the moment. I'm 11 also wondering whether such testing was performed 12 after the completion of WDW-315, and I don't know that 13 information. 14 Q Which would probably be subject to some sort 15 of settlement agreement that we couldn't see? 16 A No. No. 17 Q Okay. But you don't recall that -- 18 A Not that issue. 19 Q Okay. But you don't recall that as you sit 20 here today whether that was done or not? 21 A I don't. 22 Q Okay. You've worked on a number of UIC 23 underground injection well permits and applications. 24 Correct? 25 A Correct.</p>
<p style="text-align: right;">Page 1244</p> <p>1 could -- let me rephrase. 2 What additional facility do you need on 3 site in order to do the testing that's discussed in 4 this waste compatibility section? 5 A I guess I'm a little bit confused about the 6 question. Are you asking if they have access to 7 core -- the core samples and the formation fluids? 8 Could they run tests on those? Is that the question? 9 Q Without any additional facilities on the 10 site, yes. 11 A If they have the core -- access to core 12 samples and formation fluids, an independent -- you 13 know, they would have to be done by a laboratory or 14 some -- 15 Q Okay. 16 A They wouldn't have -- I don't believe they 17 have lab facilities on the site. 18 Q Do you believe it would be prudent to require 19 that testing for the existing well since it has been 20 sitting idle for over a decade? 21 JUDGE WALSTON: Did you finish your 22 question? I'm not sure I understood. 23 Q (By Mr. Forsberg) In carrying out the 24 mission of the TCEQ in protecting underground sources 25 of drinking water, would it be prudent to have the</p>	<p style="text-align: right;">Page 1246</p> <p>1 Q Have you visited a number of these sites that 2 are in operation? 3 A I have. 4 Q What do they look like? 5 A Well, there's -- what do they look like in 6 terms of what? I'm just not clear on -- 7 Q If you were standing in front of a typical 8 underground injection well facility, what would you 9 describe? 10 A The facility itself -- I've been to sites 11 that range from chemical plants that have injection 12 wells to wells that are quite isolated in a rural 13 area. 14 Q How would you describe the one -- the 15 proposed wells that we're here about today? 16 A In terms of -- 17 Q Well, is -- I'm sorry. That was poorly 18 phrased. 19 What area would you describe as -- is it 20 more rural or more urban or in a chemical factory? 21 How would you describe the current proposal? 22 A Well, when I -- as I can recall from the site 23 inspection I did, I guess I would characterize it as 24 partly rural, maybe agriculture, and partly rural -- 25 or rural-residential.</p>

24 (Pages 1243 to 1246)

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<p style="text-align: right;">Page 1247</p> <p>1 Q Okay. So although you didn't participate in 2 the public comment response, I believe you testified 3 in regards to whether the area was rural or 4 residential or commercial industrial. In your 5 opinion, it's at least -- there's residents around 6 there; it's partly residential. 7 A I believe there are. 8 Q And are there other underground injection 9 facilities that you have seen that are in operation 10 that are going to be similar based upon your review of 11 the proposal in appearance to the TexCom facility? 12 A Well, as far as the UIC well, you know, it 13 just consists of the wellhead down. The surface units 14 were not a part of my review. 15 Q Okay. But have you seen operational surface 16 facilities? 17 A I've seen operational surface facilities. 18 Q Have you looked at the TexCom application 19 with regards to the layout, number of tanks and 20 location of facilities? 21 A I know that the application contains a 22 diagram of those. 23 Q Okay. Have you seen other facilities that 24 have similar layouts, would have a similar appearance 25 to the proposed TexCom facility?</p>	<p style="text-align: right;">Page 1249</p> <p>1 any regards to potential nuisances created? 2 A Nuisances in terms of the public interest 3 demonstration or what context? 4 Q Well, I believe that part of the statute 5 that's relevant to this states that TCEQ won't allow 6 facilities -- and I'm not trying to state it verbatim 7 by any means, can't operate to create nuisances. Are 8 you familiar with that? 9 A Yes, I am. 10 Q Okay. And that's the -- that is the nuisance 11 I'm referring to. Did you look at -- when you looked 12 at the TexCom applications, was it part of your review 13 to look to see if those nuisances existed or 14 potentially could exist? 15 A Well, the UIC -- the Class I UIC application 16 covers from the wellhead down plus the annulus 17 monitoring system and so that -- my review consists of 18 those components. 19 Q Okay. So you're not -- your review did not 20 include a review of any nuisances created by surface 21 facilities or anything -- 22 A That's correct. 23 Q -- above ground? 24 A That's correct. 25 Q Okay. Whose responsibility would that have</p>
<p style="text-align: right;">Page 1248</p> <p>1 A I really can't remember whether the layout of 2 one I'm thinking of is real similar to this lay -- I 3 can't accurately remember enough that -- in terms of 4 they each probably have tanks and so forth, yes. 5 Q Okay. Are these something that you would 6 want in your backyard? 7 MR. WILLIAMS: Objection. 8 JUDGE WALSTON: I don't think that's 9 relevant, whether she wants it in her backyard or not. 10 MR. FORSBERG: Well -- okay. I'll 11 strike that. 12 Q (By Mr. Forsberg) In your experience, are 13 they attractive sites? 14 A Well, that just wasn't relevant to my review 15 of the UIC applications. It's just not part of my 16 review of the UIC applications. 17 Q Okay. So you never took into consideration 18 whether these types of sites pose any sort of -- for 19 lack of a better term, eyesore to the people around 20 them? 21 A Well, I -- I would -- as far as the siting 22 criteria for UIC wells, I would -- I didn't review the 23 application for compliance with the siting criteria. 24 I would -- 25 Q Okay. Did you review the application with</p>	<p style="text-align: right;">Page 1250</p> <p>1 been? 2 A I believe that question would be more 3 relevant to the surface permit -- for the surface 4 units that are -- that would be associated with the 5 wells. 6 Q Is that Mr. Graeber? 7 A Yes. 8 Q Am I pronouncing that -- 9 A Yes, Mike Graeber. 10 Q Okay. Thank you. 11 When you consider the TexCom 12 application -- well, let me preface this a little 13 better. Are there parts of the state that have had a 14 history of an increased amount of illegal dumping of 15 classified waste products? 16 MR. WILLIAMS: Objection, relevance. 17 JUDGE WALSTON: What's the relevance? 18 MR. FORSBERG: I was just going to ask a 19 couple of questions if they considered the existence 20 of Montgomery County as being a historical dumping 21 ground for waste, whether that played any role in 22 their review of the application. 23 JUDGE WALSTON: Okay. Why don't you 24 just ask that question. 25 MR. FORSBERG: Okay. I was trying to</p>

25 (Pages 1247 to 1250)

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<p style="text-align: right;">Page 1251</p> <p>1 give her some kind of preface there to not -- but I'll 2 say that. 3 Q (By Mr. Forsberg) Did you consider whether 4 Montgomery County has a history of being a dumping 5 ground for classified waste products in your review of 6 the TexCom application? 7 MR. WILLIAMS: Objection. I would like 8 Mr. Forsberg to be more specific as to whether it was 9 illegal dumping or permitted disposal. 10 MR. FORSBERG: I used the word 11 "illegal." I meant to use the word "illegal." 12 JUDGE WALSTON: Illegal? 13 MR. FORSBERG: Yes. 14 JUDGE WALSTON: Did you consider that in 15 your evaluation? 16 A My team doesn't have that information. 17 Q (By Mr. Forsberg) Okay. So it wasn't 18 considered? 19 A No. 20 Q Okay. 21 A Wait. We read a news article, but that's not 22 part of our normal team process of considerations we 23 make in evaluating compliance with the rules. 24 Q Did you rely on that newspaper article at all 25 or just reviewed it?</p>	<p style="text-align: right;">Page 1253</p> <p>1 MR. FORSBERG: I probably have, maybe, 2 another 30 minutes. 3 JUDGE WALSTON: Why don't we go ahead 4 and -- we'll break for lunch now. We'll resume at 5 1:00. 6 (Lunch recess: 11:46 a.m. to 1:02 p.m.) 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>
<p style="text-align: right;">Page 1252</p> <p>1 A Reviewed it. Just read it. 2 Q Okay. 3 A But it may have come out after our technical 4 review. I can't remember the time frame of it -- 5 well, actually, I believe it was not long before the 6 public meeting, at around the time of the public 7 meeting. 8 Q When you consider the TexCom application, 9 does the owner of the facility, the proposed 10 applicant, is it important to you or do you consider 11 who the owner is and their environmental history? 12 A Yes. 13 Q Okay. Is there any rule in place at TCEQ to 14 deal with the possibility of an ownership change 15 during a pending application? 16 A A rule dealing with an ownership change 17 during an application? 18 Q Yes, before a final permit is issued. 19 A I would have to look into the rules. I know 20 that sometimes -- I would have to -- I would have 21 to -- I'd have to look into it. 22 JUDGE WALSTON: Mr. Forsberg, do you 23 know about how much more you have? Judge Egan and I 24 need to be somewhere and I was going to quit a few 25 minutes early.</p>	<p style="text-align: right;">Page 1254</p> <p>1 AFTERNOON SESSION 2 TUESDAY, JANUARY 18, 2007 3 (1:02 p.m.) 4 JUDGE EGAN: Back on the record. Are we 5 still on cross -- go ahead, Mr. Forsberg. 6 MR. FORSBERG: Your Honors in the -- 7 JUDGE EGAN: Just a second. You may go 8 ahead. 9 MR. FORSBERG: Doing our part in 10 aiding -- keeping this moving, we have passed the 11 witness. 12 JUDGE EGAN: All right. Is it 13 Ms. Collins? 14 MS. COLLINS: Thank you, Judges. 15 PRESENTATION ON BEHALF OF 16 THE EXECUTIVE DIRECTOR (Continued) 17 KATHRYN HOFFMAN, 18 having been previously duly sworn, testified as 19 follows: 20 CROSS-EXAMINATION 21 BY MS. COLLINS: 22 Q Ms. Hoffman, did you review the public 23 interest demonstration, including the alternative 24 section of the application? 25 A I reviewed the public interest demonstration.</p>

26 (Pages 1251 to 1254)

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<p>1 I'm not sure what you mean by including the</p> <p>2 alternatives.</p> <p>3 Q Okay.</p> <p>4 A Oh, the alternatives to using an injection</p> <p>5 well?</p> <p>6 Q Correct.</p> <p>7 A Yes.</p> <p>8 Q Okay. So you did review that then?</p> <p>9 A I did.</p> <p>10 Q Would you call it a detailed review that you</p> <p>11 did of that section -- can we agree to call it the</p> <p>12 alternative section just for ease of reference?</p> <p>13 A Yes.</p> <p>14 Q Okay.</p> <p>15 A I may want to refresh my memory about that.</p> <p>16 It's probably an appendix or an attachment.</p> <p>17 Q Yeah, let me get there. Just a second. I</p> <p>18 think it's Exhibit 6, but I'm not positive.</p> <p>19 JUDGE WALSTON: 6?</p> <p>20 MR. RILEY: Page 195 of 314.</p> <p>21 WITNESS HOFFMAN: In Exhibit 6?</p> <p>22 MR. RILEY: Yes, ma'am.</p> <p>23 JUDGE WALSTON: What volume is that?</p> <p>24 MR. RILEY: That's Volume 2.</p> <p>25 JUDGE EGAN: Thank you.</p>	<p>1 A Yes, (d) lists the criteria that we use on</p> <p>2 our team when we do these reviews.</p> <p>3 Q Okay.</p> <p>4 A .051 -- yes.</p> <p>5 Q So you looked for the general things that are</p> <p>6 stated in that statutory section?</p> <p>7 A Yes.</p> <p>8 Q Okay. Did your review include looking at</p> <p>9 capacity of other potential injection facilities?</p> <p>10 A I didn't do -- I didn't have any additional</p> <p>11 information besides what was presented in the</p> <p>12 application.</p> <p>13 Q Okay. Would you call your review qualitative</p> <p>14 or quantitative?</p> <p>15 A Qualitative.</p> <p>16 Q Okay. So when the statute speaks to</p> <p>17 economics of potential alternatives, you wouldn't call</p> <p>18 that a quantitative analysis?</p> <p>19 A That's correct.</p> <p>20 Q Okay.</p> <p>21 A Our team doesn't have data to perform a</p> <p>22 quantitative analysis.</p> <p>23 Q Okay. Do you look for any cost estimates in</p> <p>24 your analysis of potential alternatives?</p> <p>25 A Only as described in the material in the</p>
Page 1256	Page 1258
<p>1 WITNESS HOFFMAN: I'm sorry, could I</p> <p>2 have the pages again?</p> <p>3 MR. RILEY: Page 195 of 314.</p> <p>4 Q (By Ms. Collins) So you're there at Page 195</p> <p>5 of 314?</p> <p>6 A Yes.</p> <p>7 Q And do you recall reviewing this section of</p> <p>8 the application?</p> <p>9 A Yes.</p> <p>10 Q Okay. Would you call your review of that</p> <p>11 section a detailed review?</p> <p>12 A I reviewed the material submitted by the</p> <p>13 applicant.</p> <p>14 Q You read through it?</p> <p>15 A I did.</p> <p>16 Q Okay. What sort of information were you</p> <p>17 looking for in that review? Do you recall?</p> <p>18 A Well, I'm reviewing it against what's stated</p> <p>19 in the statute for the public interest demonstration,</p> <p>20 27 --</p> <p>21 Q I believe it's 27.051 if you want to look at</p> <p>22 it.</p> <p>23 A Yes. Thank you.</p> <p>24 Q Sure. And to be more precise, I believe it's</p> <p>25 27.051(a) and (d).</p>	<p>1 application. If such information is presented, then</p> <p>2 it's considered.</p> <p>3 Q Okay.</p> <p>4 A Even -- yes, it's considered in -- I think in</p> <p>5 a comparative way.</p> <p>6 Q Okay. Do you -- in your opinion, is it</p> <p>7 valuable to consider alternatives to injection for</p> <p>8 commercial nonhazardous industrial wastewater?</p> <p>9 A Yes.</p> <p>10 Q Do you think it's valuable for a well that</p> <p>11 would be proposed to be built in Gulf Coast geology?</p> <p>12 A Yes.</p> <p>13 Q Okay. Why do you think that?</p> <p>14 A Well, just in -- just by a general -- well,</p> <p>15 first, in compliance with the statute, it's required</p> <p>16 by Texas law, that's mainly the basis. It's a</p> <p>17 requirement of Texas law to do that consideration and</p> <p>18 that's what I based my review on.</p> <p>19 Q So outside of the requirement that they look</p> <p>20 at it, you don't have an opinion that it's necessary</p> <p>21 to look at it or not?</p> <p>22 A Well, I try to focus my -- I try to focus my</p> <p>23 work on the requirements of the statutes and the laws.</p> <p>24 Q Fair enough. What's a treatability study?</p> <p>25 Do you know?</p>

27 (Pages 1255 to 1258)

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<p style="text-align: right;">Page 1259</p> <p>1 A It's not -- a treatability study? Not in any 2 depth. 3 Q Do you know -- 4 A I don't know in any depth. 5 Q Do you know that the application requests 6 treatability studies for the -- as I'm calling it -- 7 the alternatives analysis? 8 A I need to read through this to refresh my 9 memory. Are you saying that's stated in this section 10 in the alternatives? 11 Q Well, it's actually where the public interest 12 demonstration is required in the application. It's 13 Page 12 of 314, I believe, if you want to look at 14 that, No. 6. 15 A Under the public interest demonstration? 16 Q Right. You see No. 6 at the bottom? 17 A Yes. 18 Q You can skim that if you want. 19 A Is this the -- I want to see what I'm looking 20 at. This is the application -- okay. 21 Q So you recall the application requesting 22 treatability studies? 23 A Yes. 24 Q Okay. Could you explain what a treatability 25 study is?</p>	<p style="text-align: right;">Page 1261</p> <p>1 Q Okay. If you have said earlier that -- 2 A -- or depth. 3 Q Or depth. I'm sorry. I didn't mean to cut 4 you off. 5 I think you said earlier to me that you 6 can't really consider things like capacity unless it's 7 provided in the application. Is that right? The 8 need -- 9 A That's right. Because our team doesn't 10 collect information. We don't have the resources or 11 the information available to make that kind of a 12 determination. 13 Q Okay. Does that mean that you don't have 14 any knowledge of existing capacity in Texas for this 15 sort of waste in injection wells? 16 A Could you -- could you please just ask me 17 again? 18 Q Sure. Do you have any knowledge of what 19 existing -- the existing capacity in Texas is of 20 permitted Class I nonhazardous industrial wastewater? 21 A Not without going through our database and 22 gathering -- gathering data and gathering information. 23 Q So it's something that might be available to 24 you, but it's not something you reviewed for this 25 application?</p>
<p style="text-align: right;">Page 1260</p> <p>1 A Well, it would be -- it would have to do with 2 treating the waste for -- to change its 3 characteristics so that it could be -- treatment is 4 kind of a broad term -- but to -- well, I would rely 5 on the definition in the rules for treatment. 6 Q For treatment? 7 A Or treatability. 8 Q Okay. We can defer to that if it's there. 9 But -- you don't need to go there. I'll ask you 10 another question. 11 In your opinion, could it be -- could a 12 treatability study be used to determine if other 13 treatment and disposal methods were feasible? 14 A Yes. 15 Q Okay. How would it be used to do that? 16 A Well, there could be other alternatives if -- 17 you know, if the waste is put through one or another 18 process and changed so that it would be acceptable for 19 other disposal options. 20 Q Okay. Do you recall seeing any treatability 21 studies provided in the application? 22 A Not beyond what is presented in Attachment C. 23 Q Okay. Would you call what's in Attachment C 24 a treatability study? 25 A I don't believe -- not in any detail --</p>	<p style="text-align: right;">Page 1262</p> <p>1 A Correct. 2 Q Okay. 3 A It's actually something that wouldn't 4 typically be done by our team in our review process. 5 Q Okay. Do you have your deposition testimony 6 in front of you at all? 7 A If somebody could -- 8 Q I can give it to you. 9 JUDGE EGAN: That's Volume 15. 10 MS. COLLINS: Yeah, Exhibit 62. 11 Q (By Ms. Collins) Did you find it? I can 12 bring you my copy. 13 A I was putting away another volume. I'm 14 sorry. 15 Q That's okay. 16 MS. COLLINS: Can I approach? 17 JUDGE EGAN: Yes. 18 MS. COLLINS: Okay. I'm referring 19 specifically, Counsel, to Page 18 of 66 in TexCom 20 Exhibit 62, Lines 26 through 28. 21 Q (By Ms. Collins) Do you see that? 22 A Yes. 23 Q Could you explain what was meant by -- what 24 you understood to be meant by "precedents" in your 25 answer to that question?</p>

28 (Pages 1259 to 1262)

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<p style="text-align: right;">Page 1263</p> <p>1 A By precedents I assume it mean what's 2 typically been done before in this regard. 3 Q Okay. But do you think it's referring 4 specifically to your team's policies and how they've 5 handled things in the past or potentially contested 6 case precedents? What's your understanding? 7 A My understanding would just our team's -- 8 team's procedures. 9 Q Okay. I noticed that you have worked mainly 10 on noncommercial injection facilities. Is that 11 correct? 12 A Correct. 13 Q Or I should say wells, perhaps, rather than 14 facilities, but you understood that, I suppose. 15 Do you think alternative methods of 16 disposal can be adequately evaluated by comparing 17 commercial disposal facilities to noncommercial 18 disposal facilities? 19 A I don't think those are -- I think they would 20 be a factor in the consideration, but not -- they 21 could be a factor, but not directly comparable. I'm 22 sorry, maybe I didn't really understand what you're 23 asking. 24 Q That's okay. Do you think that they are 25 comparable in evaluating whether alternatives exist,</p>	<p style="text-align: right;">Page 1265</p> <p>1 try it again. 2 Do you think it's -- you can come to a 3 conclusion based on the statutory requirements 4 regarding alternatives if you are comparing a 5 commercial facility only to noncommercial facilities? 6 A Do I think I could come to a conclusion in 7 that case? 8 Q Yes. 9 A Oh, that's tough. It depends on comparing -- 10 well -- so the comparison is between a commercial 11 facility versus a noncommercial facility? 12 Q Yeah, if that were the only comparison being 13 done? 14 A And the alternatives that each of those types 15 of facilities would have? 16 Q Right. If you were comparing a commercial 17 injection -- a proposed commercial injection facility 18 for the type of waste proposed here to generators, do 19 you -- could you make a determination based on 20 practicality, economics and feasibility? 21 A I think you compare commercial disposal 22 options and then you compare -- you would compare them 23 separately. They would have separate criteria I 24 think. 25 Q Okay. That was my question.</p>
<p style="text-align: right;">Page 1264</p> <p>1 noncommercial and commercial facilities? 2 A Well, yes, in some -- yes. 3 Q They are comparable? 4 A In evaluating whether alternatives to 5 disposal exist -- 6 Q Okay. 7 A -- practical and feasible alternatives exist? 8 Q Yes. 9 A I guess I'm having trouble because I'm not -- 10 there are differences for sure in the consideration -- 11 you know, in one case an entity is disposing of the 12 waste it generates. So those alternatives would be 13 possibly different than alternatives for a commercial 14 operation. So in that way they're not comparable. 15 Q All right. 16 A I'm not sure -- 17 Q That's what I was curious about, if the -- if 18 you're comparing a generator to a disposal facility 19 that hasn't generated the waste, is it possible to 20 conclude that alternatives do or do not exist based on 21 the considerations in the statute? 22 A Yes. 23 Q It is possible? 24 A To -- I think I might have lost -- 25 Q That's okay. That was a long question. I'll</p>	<p style="text-align: right;">Page 1266</p> <p>1 A I'm sorry. Thank you for -- being so slow. 2 Q No, I think it was me. 3 MS. COLLINS: I think those are my 4 questions. I'll grab my deposition, if I can 5 approach. 6 MR. WILLIAMS: Just a few quick redirect 7 questions, Your Honor. 8 JUDGE EGAN: Okay. I have one question. 9 Do you want me to wait -- 10 MR. WILLIAMS: No, go ahead. 11 CLARIFYING EXAMINATION 12 BY JUDGE EGAN: 13 Q I just want to clarify, during Mr. Hill's 14 questioning he asked -- he mentioned or discussed the 15 fact that there's been a change of the cone of 16 influence from 150 feet to 750 feet. And the question 17 I thought he asked and I never heard an answer to is, 18 is the difference between the cone of influence of 19 150 feet to 750 feet a significant change? Do you 20 have an opinion on that? 21 A I think it's significant. 22 JUDGE EGAN: That's all I have. Thank 23 you. 24 Mr. Williams? 25</p>

29 (Pages 1263 to 1266)

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<p style="text-align: right;">Page 1267</p> <p>1 REDIRECT EXAMINATION</p> <p>2 BY MR. WILLIAMS:</p> <p>3 Q Ms. Hoffmann, there was -- you fielded a few</p> <p>4 questions about nuisance?</p> <p>5 A Yes.</p> <p>6 Q Has the TCEQ -- have the Commissioners set</p> <p>7 down any rules on how staff can evaluate a nuisance?</p> <p>8 A Not that I'm aware of in UIC.</p> <p>9 Q And have they provided any training to staff</p> <p>10 on how to evaluate a nuisance?</p> <p>11 A No, not for my program, which is the</p> <p>12 underground injection control program.</p> <p>13 Q Could you assume from that that a decision on</p> <p>14 nuisance is one that's usually deferred to the</p> <p>15 Commissioners to make?</p> <p>16 A Yes.</p> <p>17 Q And Mr. Grant's Exhibit 11, the District's</p> <p>18 Exhibit 11, the permit application, do you still have</p> <p>19 that up there with you?</p> <p>20 A The permit application?</p> <p>21 Q Yes.</p> <p>22 A Yes.</p> <p>23 Q The blank form?</p> <p>24 A Oh, the form?</p> <p>25 Q Is it the blank form? This is the Lone Star</p>	<p style="text-align: right;">Page 1269</p> <p>1 Q And a renewal application is an existing well</p> <p>2 that's permitted. Is that correct?</p> <p>3 A That's correct.</p> <p>4 Q You have an existing well that's not</p> <p>5 permitted?</p> <p>6 A Correct.</p> <p>7 Q Would you consider that to be a new well?</p> <p>8 A I have considered it to be a new well in my</p> <p>9 review.</p> <p>10 Q Good.</p> <p>11 MR. WILLIAMS: Those are the only</p> <p>12 questions I have on redirect, Your Honor. Pass.</p> <p>13 JUDGE EGAN: Okay. Mr. Riley?</p> <p>14 MR. RILEY: Yes, I have several.</p> <p>15 RECROSS-EXAMINATION</p> <p>16 BY MR. RILEY:</p> <p>17 Q Good afternoon, Ms. Hoffman. Can you hear me</p> <p>18 all right from way down there?</p> <p>19 A Yes, thank you.</p> <p>20 Q I think it was Mr. Hill was asking you</p> <p>21 questions earlier about the changes to the</p> <p>22 application. Is it your understanding -- well, let me</p> <p>23 ask you a different question first.</p> <p>24 Have you ever been involved in a</p> <p>25 contested case for a UIC permit application?</p>
<p style="text-align: right;">Page 1268</p> <p>1 Groundwater Conservation District's prefiled Exhibit</p> <p>2 11.</p> <p>3 JUDGE WALSTON: I think you have the</p> <p>4 right volume.</p> <p>5 Q (By Mr. Williams) It was attached to</p> <p>6 Mr. Grant's prefiled --</p> <p>7 A I think I found it.</p> <p>8 Q Okay. And you had some questions on the</p> <p>9 waste compatibility on Page 32 of 32?</p> <p>10 A Yes.</p> <p>11 Q And there was some question whether this was</p> <p>12 a constructed facility or an unconstructed facility.</p> <p>13 Holding your place there on Page 32, would you look</p> <p>14 back to page -- Roman Numeral little iii on that same</p> <p>15 exhibit?</p> <p>16 A Yes.</p> <p>17 Q And just above the number nine there is a</p> <p>18 direction to "Send with the payment a copy of Page 1</p> <p>19 of the application form (one copy per injection well);</p> <p>20 write 'New Well' on the page if this is an initial</p> <p>21 application."</p> <p>22 A Yes.</p> <p>23 Q Can this form be used for renewal</p> <p>24 application?</p> <p>25 A Yes.</p>	<p style="text-align: right;">Page 1270</p> <p>1 A Yes.</p> <p>2 Q And as part of that case were any changes</p> <p>3 made to the special conditions in the permit?</p> <p>4 A Yes.</p> <p>5 Q So it is allowed in the overall process of a</p> <p>6 permit application that additional conditions could be</p> <p>7 added or recommended by SOAH and perhaps added by the</p> <p>8 Commission in issuance of a permit?</p> <p>9 A Yes, that's correct.</p> <p>10 Q You did some of your homework -- and I</p> <p>11 applaud your diligence in at least satisfying your</p> <p>12 curiosity. Am I to understand that you ran the PRESS2</p> <p>13 model this weekend?</p> <p>14 A Yes.</p> <p>15 MR. WILLIAMS: Objection, goes beyond</p> <p>16 redirect.</p> <p>17 MR. RILEY: Well, but it's --</p> <p>18 JUDGE EGAN: Does it not go beyond</p> <p>19 redirect?</p> <p>20 MR. RILEY: Goes beyond redirect, but</p> <p>21 given the order of witnesses and the applicant's</p> <p>22 interests in this matter, Judge, I think it's frankly</p> <p>23 typical that if there have been questions raised on</p> <p>24 cross-examination, then the applicant is given the</p> <p>25 latitude to ask a few questions at least on each of</p>

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<p style="text-align: right;">Page 1271</p> <p>1 the subjects.</p> <p>2 JUDGE EGAN: That's not been my</p> <p>3 experience. This is limited to recross, and recross</p> <p>4 is limited to Mr. Williams' redirect.</p> <p>5 MR. RILEY: Then I'd ask that the</p> <p>6 witness be made available for rebuttal witness --</p> <p>7 MR. WILLIAMS: That's --</p> <p>8 MR. RILEY: -- fine. Then I'm going to</p> <p>9 have to ask for a subpoena to be issued to ask these</p> <p>10 questions. We think they're critical to completing</p> <p>11 the record.</p> <p>12 JUDGE EGAN: You do whatever you feel is</p> <p>13 necessary.</p> <p>14 MR. RILEY: I assume I'm allowed to ask</p> <p>15 questions based on Your Honor's questions of the</p> <p>16 witnesses, correct?</p> <p>17 JUDGE EGAN: Yes, you can.</p> <p>18 MR. RILEY: Because that's what I was</p> <p>19 asking about is cone of influence.</p> <p>20 JUDGE EGAN: -- need to make sure it's</p> <p>21 on the cone, because the only part I asked was on the</p> <p>22 difference between 150 and that 750, which is your</p> <p>23 client's change of the cone of influence.</p> <p>24 MR. RILEY: Yes. But I want to make</p> <p>25 clear that it was not a change in the application, it</p>	<p style="text-align: right;">Page 1273</p> <p>1 Q And what you did this past weekend?</p> <p>2 A Right. Right.</p> <p>3 Q Could you take a look at Volume 9 of the</p> <p>4 TexCom application, Exhibit 11, Page 126 -- I'm sorry,</p> <p>5 I believe it's Volume 9 of the TexCom binders.</p> <p>6 A Is it Volume 9 of the exhibit?</p> <p>7 Q I think it's Volume 9 of the TexCom volumes.</p> <p>8 It may even be in front of you somewhere.</p> <p>9 MR. HILL: You said Page 126?</p> <p>10 MR. RILEY: Page 126, yes. It's Exhibit</p> <p>11 11, Page 126, and I believe it's a reference to some</p> <p>12 compatibility testing done by OMNI Laboratories.</p> <p>13 WITNESS HOFFMAN: Is it part of the</p> <p>14 application?</p> <p>15 JUDGE WALSTON: Yes.</p> <p>16 MR. RILEY: Yes, it is.</p> <p>17 A I'm sorry, I missed the page number.</p> <p>18 Q (By Mr. Riley) That's fine. Page 126.</p> <p>19 A Of?</p> <p>20 Q Of 270. I'm sorry, we're in Exhibit 11 --</p> <p>21 TexCom Exhibit 11. And you may be looking at binder</p> <p>22 number --</p> <p>23 A I have Volume 11.</p> <p>24 Q I'm sorry, it's Volume 9.</p> <p>25 A Okay.</p>
<p style="text-align: right;">Page 1272</p> <p>1 was a change in the testimony.</p> <p>2 JUDGE EGAN: That's fine. You may ask</p> <p>3 questions on my questions.</p> <p>4 Q (By Mr. Riley) The cone of influence, as</p> <p>5 described by the applicant, was zero. Is that</p> <p>6 correct? And that's because no wells were completed</p> <p>7 into the lower Cockfield, no artificial penetrations</p> <p>8 were into the lower Cockfield?</p> <p>9 A You're referring to the application, right?</p> <p>10 Q Yes, ma'am.</p> <p>11 A They -- yes, I believe that's part of the</p> <p>12 rationale.</p> <p>13 Q Now, there are two issues for the cone of --</p> <p>14 at least two, but two issues. One is to determine the</p> <p>15 area of review, correct?</p> <p>16 A Yes, that's part of it.</p> <p>17 Q So the cone of influence, if it's larger than</p> <p>18 the area of review -- the standardized area of review</p> <p>19 of 2.5 miles -- then it would cause one to grow or</p> <p>20 increase the area of review, correct?</p> <p>21 A Correct.</p> <p>22 Q In no case, other than in one of Mr. Grant's</p> <p>23 scenarios, does the alleged area of review increase</p> <p>24 over two-and-a-half miles, correct?</p> <p>25 A That's correct from what I've heard here.</p>	<p style="text-align: right;">Page 1274</p> <p>1 Q It gets confusing. I'm sorry.</p> <p>2 A Okay. I have Volume 9 now.</p> <p>3 Q Volume 9, if you would find Exhibit 11, which</p> <p>4 hopefully has a tab -- actually the tab that I find in</p> <p>5 my volume is Section 4. Do you see that?</p> <p>6 A Yes.</p> <p>7 Q This is the TexCom application, correct?</p> <p>8 A Yes, I think so.</p> <p>9 Q All right. Take a moment and look at page --</p> <p>10 I think I said 126, but if you flip over to Page</p> <p>11 127 --</p> <p>12 A Okay.</p> <p>13 Q You see Section 4.7 there?</p> <p>14 A Yes.</p> <p>15 Q Do you see the heading "Compatibility</p> <p>16 Testing"?</p> <p>17 A Yes.</p> <p>18 Q Was this part of the application that you</p> <p>19 reviewed, including the supporting material from Omni</p> <p>20 Labs in Exhibit 7?</p> <p>21 A Yes.</p> <p>22 Q Would that be the type of compatibility</p> <p>23 testing that you were questioned about by Mr. Forsberg</p> <p>24 earlier?</p> <p>25 A Yes, it is.</p>

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<p style="text-align: right;">Page 1275</p> <p>1 Q I'll probably get slapped, but let's see how 2 it works. The Office of Public Interest Counsel asked 3 you a number of questions about compatibility -- 4 excuse me, not compatibility -- about capacity, and 5 also about the difference between a review of the 6 commercial versus a noncommercial well. As part of 7 that, there were questions about treatability studies. 8 Would you agree that a treatability study is more 9 likely to be applicable or able to be done in a 10 noncommercial setting when the wastestream is known to 11 the applicant? 12 A Yes. 13 Q And if TexCom were to go to potential 14 customers and ask to do treatability studies, would 15 you think that's a bit unrealistic given the fact they 16 have no contractual relationship with a potential 17 customer? 18 A Yes. 19 Q The form that TexCom filled out would be 20 useful -- or used rather in a noncommercial well 21 application, correct? 22 A You said the form that TexCom filled out? 23 Q Yes, I'm sorry, the application form is not 24 different for commercial versus noncommercial? 25 A In general that's true. There are some</p>	<p style="text-align: right;">Page 1277</p> <p>1 what you did this past weekend. Is that your 2 understanding? 3 A Yes. 4 Q He varied one parameter and that was 5 permeability of 81 millidarcies. Do you remember 6 that -- 7 A Yes. 8 Q -- the applicant used 500 and Mr. Grant used 9 81. 10 A Yes. 11 Q And varying that parameter and limiting as 12 PRESS2 -- PRESS2 would, limiting the injection 13 interval to 145 feet, he came up with 3170. Is that 14 correct? 15 A That's -- as I recall. 16 Q And as you -- the model you did this weekend, 17 you don't rely on and you don't know particularly what 18 was different or wrong about it, but you don't think 19 it's reliable. Is that also correct? 20 A I don't think it's as reasonable as the 21 modeling I did when I did my review. 22 Q And again, just -- even based on your 23 recollection of what your model this weekend yielded 24 in terms of the cone of influence, that was between 5 25 and 10,000 feet, as I recall your testimony earlier</p>
<p style="text-align: right;">Page 1276</p> <p>1 sections that -- that is true. There may be some 2 specific things that apply only to commercial or 3 noncommercial, but they're small in number. 4 MR. RILEY: I find myself in an awkward 5 position, but let me renew my application. I have 6 probably two or three questions about the modeling 7 that was done this weekend. This witness, as I 8 understand it, has a very significant life event later 9 in the week that I'd really rather not -- 10 MR. WILLIAMS: Rather than have her -- 11 JUDGE EGAN: You want to withdraw your 12 objection? 13 MR. WILLIAMS: I'll withdraw the 14 objection. 15 JUDGE EGAN: Go ahead. 16 Q (By Mr. Riley) Ms. Hoffman, regarding the 17 modeling you did this weekend, I really only have some 18 very basic questions. As I understand it, you used 19 PRESS2, which was the same model used by Mr. Grant in 20 his modeling, correct? 21 A Correct. 22 Q And Mr. Grant's results, assuming, as I 23 understand it, that the same parameters that you put 24 into the model of 145 feet being the boundary of the 25 injection interval, yielded different results from</p>	<p style="text-align: right;">Page 1278</p> <p>1 today. Is that correct? 2 A Yes, somewhere in that area. 3 Q And the -- in terms of feet -- number of feet 4 in a 2-and-a-half mile area of review, the number of 5 feet in the area of review would be 13,200 feet. Is 6 that correct? 7 A That sounds about right. 8 Q 5,260 -- 9 A It's 2.5 times 5,280, right. That sounds 10 about right. And let me back up on my answer. I 11 didn't -- I didn't try to pin it down exactly to what 12 the cone of influence would be on my weekend run, but 13 I think it's in that ball park. 14 Q Okay. 15 A I didn't come up with a very exact number. I 16 just was looking at it. 17 Q And either way, if it's in that range, it 18 still would not have increased the area of review. Is 19 that correct? 20 A No, no -- right. That's true, yes. 21 MR. RILEY: Thank you. 22 And thank you, Mr. Williams, for the 23 latitude. 24 I hope you have a great weekend. 25 WITNESS HOFFMAN: Thank you.</p>

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<p>1 JUDGE EGAN: Okay. Mr. Hill?</p> <p>2 MR. HILL: Your Honor, I just -- I have</p> <p>3 a clarifying question I need to ask based on</p> <p>4 Mr. Riley's testimony -- or questions rather and</p> <p>5 Ms. Hoffmann's testimony about the modeling. I</p> <p>6 understand it's beyond the scope of what was -- of the</p> <p>7 Executive Director's redirect. I'm wondering if I</p> <p>8 might be able to ask the witness a clarifying</p> <p>9 question?</p> <p>10 JUDGE EGAN: Yes.</p> <p>11 MR. HILL: Okay.</p> <p>12 RECROSS-EXAMINATION</p> <p>13 BY MR. HILL:</p> <p>14 Q Ms. Hoffman, if I understand correctly, the</p> <p>15 thickness value for the modeling that you used in your</p> <p>16 review of the TexCom application was 546 feet. Is</p> <p>17 that correct?</p> <p>18 A That's correct.</p> <p>19 Q And have you reviewed the models that have</p> <p>20 been run by Mr. Grant as part of his review of the</p> <p>21 UIC -- the TexCom UIC application?</p> <p>22 A Have I reviewed his model?</p> <p>23 Q Have you been exposed to them? Have you seen</p> <p>24 the models that he ran?</p> <p>25 A I heard him testify about them.</p>	<p>1 Honor.</p> <p>2 JUDGE EGAN: Ms. Collins?</p> <p>3 MS. COLLINS: No questions.</p> <p>4 JUDGE EGAN: Thank you. Mr. Williams?</p> <p>5 MR. WILLIAMS: Nothing.</p> <p>6 JUDGE EGAN: Anything, Mr. Walston?</p> <p>7 Then the witness may be excused. Thank</p> <p>8 you.</p> <p>9 MR. WILLIAMS: Your Honor, the Executive</p> <p>10 Director would next call John Santos.</p> <p>11 (Witness sworn)</p> <p>12 JOHN SANTOS,</p> <p>13 having been duly sworn, testified as follows:</p> <p>14 DIRECT EXAMINATION</p> <p>15 BY MR. WILLIAMS:</p> <p>16 Q Mr. Santos, do you find the notebook of the</p> <p>17 Executive Director's prefiled in front of you? It may</p> <p>18 be off to the right.</p> <p>19 A Yeah. Yes, I have it.</p> <p>20 Q Would you please look at the exhibit labeled</p> <p>21 ED-12?</p> <p>22 A Yes.</p> <p>23 Q Would you please describe what that is?</p> <p>24 A It's my prefiled testimony.</p> <p>25 Q Did you prepare all the answers to the</p>
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<p>1 Q Did you understand his testimony to be that</p> <p>2 the thickness value he used in his model was 145 feet?</p> <p>3 A I understood that.</p> <p>4 Q Okay. And do you -- is your testimony that</p> <p>5 you believe that the appropriate thickness value for</p> <p>6 modeling the injection -- proposed injection interval</p> <p>7 should be 546 feet?</p> <p>8 A I think that is more real realistic than</p> <p>9 145 feet considering that -- that the entire injection</p> <p>10 zone is available for emplacement of the waste.</p> <p>11 Q And you understand the entire depth of the</p> <p>12 lower Cockfield at WDW-315 to have available 145 feet</p> <p>13 of sands for perforation per what the applicant has</p> <p>14 suggested in its application?</p> <p>15 A Yes, that's the perforated -- that's the</p> <p>16 number of feet perforated. However, waste can be</p> <p>17 within the injection zone, which is much -- much</p> <p>18 higher than that.</p> <p>19 MR. HILL: Okay. That's all the</p> <p>20 questions I have. I pass the witness.</p> <p>21 JUDGE EGAN: Ms. Stewart?</p> <p>22 MS. STEWART: I have no further</p> <p>23 questions for this witness.</p> <p>24 JUDGE EGAN: Mr. Forsberg?</p> <p>25 MR. FORSBERG: Nothing further, Your</p>	<p>1 questions yourself?</p> <p>2 A Yes.</p> <p>3 Q Do you have any changes or additions you want</p> <p>4 to make to that now?</p> <p>5 A No changes.</p> <p>6 Q And would you adopt this prefiled testimony</p> <p>7 today as if you were giving live testimony today?</p> <p>8 A Yes.</p> <p>9 Q Would you please look at ED-13 and describe</p> <p>10 it, please.</p> <p>11 A It's my resume.</p> <p>12 Q Did you prepare this yourself?</p> <p>13 A Yes.</p> <p>14 Q Do you have any changes or corrections you</p> <p>15 need to make to it at this time?</p> <p>16 A No, sir.</p> <p>17 MR. WILLIAMS: Your Honor, I would offer</p> <p>18 Exhibits 12 and 13 into evidence.</p> <p>19 JUDGE EGAN: I don't believe there were</p> <p>20 any objections filed to ED Exhibits 12 and 13, so they</p> <p>21 are admitted.</p> <p>22 (ED Exhibit Nos. 12 and 13 admitted)</p> <p>23 MR. WILLIAMS: And I will pass the</p> <p>24 witness.</p> <p>25 JUDGE EGAN: Mr. Riley?</p>

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<p style="text-align: right;">Page 1283</p> <p>1 MR. RILEY: Good afternoon, Mr. Santos. 2 I have no questions. I'll pass the witness. 3 JUDGE EGAN: Mr. Hill? 4 MR. WILLIAMS: No questions of this 5 witness, Your Honor. 6 JUDGE EGAN: All right. Mr. Walker? 7 MR. WALKER: Yes, Your Honor, I do have 8 a few questions. 9 CROSS-EXAMINATION 10 BY MR. WALKER: 11 Q Good afternoon, Mr. Santos. My name is David 12 Walker. I'm county attorney from Montgomery County. 13 How are you, sir? 14 A Just fine. 15 Q Mr. Santos, you provided, I believe, the 16 geological review of the application for TexCom Gulf 17 Disposal? 18 A That's right. 19 Q In that regard, Mr. Santos, would the 20 subsurface structure of the area of review be of 21 interest to you with respect to your duties in 22 reviewing the application? 23 A Yes. 24 Q Are you familiar -- we won't go into it at 25 this moment -- but are you familiar with Rule 331.121</p>	<p style="text-align: right;">Page 1285</p> <p>1 A That sounds correct. 2 Q All right. Now, this language "known or 3 suspected," how do you interpret that and how do you 4 apply that language? 5 A I would interpret that to mean that all of 6 the known faults or suspected faults should be shown. 7 JUDGE EGAN: I'm sorry, you need to 8 repeat that. We had some noise in background. 9 WITNESS SANTOS: All known faults or 10 suspected faults should be shown. 11 Q All right. I think probably just plain 12 English might tell us what a known fault is but, if 13 you don't mind, tell the Court what you would consider 14 to be a known fault? 15 A As far as reviewing an application, I would 16 consider it the faults that were shown on the maps in 17 the application. 18 Q All right, sir. Would it be fair to say 19 then, Mr. Santos, that a fault that was clearly 20 delineated, supported by perhaps consistent 21 documentation -- research documentation -- and then 22 presented in an application, would that be at least 23 this poor lawyer's suggestion of a known fault? 24 A What application are you talking about? 25 Q That's fair enough. In the TexCom</p>
<p style="text-align: right;">Page 1284</p> <p>1 as it applies to the approval of Class I injection 2 wells of the Texas Administrative Code? 3 A I'd have to look at it. 4 Q Mr. Santos, in the application presented to 5 you and in the portions that you reviewed, how many 6 faults were designated by TexCom? 7 A I believe it was two. 8 Q Let me ask you if the presence of faulting in 9 the area of review would be an important consideration 10 for your review of the application? 11 A Yes. 12 Q And why would faulting be an important 13 consideration? 14 A One of our criteria is that the confining 15 zone is not cut by transmissive faults. 16 Q All right. And if the confining zone is cut 17 by transmissive faults, what does that do? 18 A If it was transmissive vertically, it might 19 provide a path for contamination of USCWs. 20 Q All right. Let me ask you, Mr. Santos, if 21 Rule 331.121 of the Texas Administrative Code, 22 subsection (a)(2)(A), if there is a reference in 23 there -- if you know -- that a map should be reviewed 24 which shows faults, if known or suspected. Is that 25 criteria at least such that you're familiar with?</p>	<p style="text-align: right;">Page 1286</p> <p>1 application, if there were a fault or two listed that 2 seemed to be supported by geologic reference 3 information suggesting the actual presence of the 4 fault, would that at least be some suggestion of a 5 known fault? 6 A Yes. 7 Q All right. Have you ever -- well, let me 8 back up. 9 How many Class I well applications have 10 you reviewed for geologic issues? 11 A Let's see -- I've reviewed two other new 12 permit applications and several applications for 13 amendments or renewals. 14 Q All right. And you've been employed at the 15 Texas Commission on Environmental Quality how long? 16 A Approximately 13 years. 17 Q All right, sir. Have you ever had in your 18 experience the occasion to come into contact with or 19 review or suspect in an application a suspected fault? 20 A I can't think of an occasion. 21 Q All right. I don't want to ask you to 22 interpret necessarily why that word is in the 23 Administrative Code, but the reference is "the map 24 should also show, if known" -- excuse me, "also show 25 faults, if known or suspected." Do you agree with me</p>

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<p style="text-align: right;">Page 1287</p> <p>1 that that language is in there?</p> <p>2 A Yes.</p> <p>3 Q Would you agree with me that the word</p> <p>4 "suspected" can be distinguished from the word</p> <p>5 "known"?</p> <p>6 A I guess it could be, yes.</p> <p>7 Q Would you agree with me that clearly the</p> <p>8 Administrative Code is -- at least on its face --</p> <p>9 categorizing faults two different ways, known and</p> <p>10 suspected?</p> <p>11 A Okay.</p> <p>12 Q Would a thorough review of an application</p> <p>13 anticipate that an applicant would list known and</p> <p>14 suspected faults?</p> <p>15 A I think so, yes.</p> <p>16 Q Now then, I believe, if I may, that that same</p> <p>17 section -- excuse me, Rule 331.121 Texas</p> <p>18 Administrative Code, in subsection (P) -- like Paul --</p> <p>19 says "delineation of all faults within the area of</p> <p>20 review, together with a demonstration, unless</p> <p>21 previously demonstrated to the Commission or to the</p> <p>22 United States Environmental Protection Agency, that</p> <p>23 the fault is not sufficiently transmissive or</p> <p>24 vertically extensive to allow migration of hazardous</p> <p>25 constituents out of the injection zone."</p>	<p style="text-align: right;">Page 1289</p> <p>1 questions. Okay.</p> <p>2 MR. WALKER: Yes, sir.</p> <p>3 JUDGE WALSTON: I forgot where we were.</p> <p>4 Mr. Walker?</p> <p>5 MR. WALKER: Thank you, Judge.</p> <p>6 Q (By Mr. Walker) Mr. Santos, I asked the</p> <p>7 court reporter to just sort of refresh our memory as</p> <p>8 to where we left off. I think I asked a question: Do</p> <p>9 you apply that analysis that we just discussed that's</p> <p>10 in Rule 31 to both known and suspected faults, and I</p> <p>11 believe your answer was, yes, that you would?</p> <p>12 A That's right.</p> <p>13 Q Okay. Thank you, sir.</p> <p>14 Mr. Santos, of the two faults that you</p> <p>15 testified were presented in the application, did you</p> <p>16 attempt to make a determination as to whether or not</p> <p>17 they were transmissive?</p> <p>18 A Yes.</p> <p>19 Q And what was your conclusion?</p> <p>20 A My opinion is they're not transmissive.</p> <p>21 Q Okay. And that determination, of course, is</p> <p>22 specifically directed -- that you make that</p> <p>23 determination is specifically directed in Rule 331.</p> <p>24 A Yes.</p> <p>25 Q All right. Would you perhaps just briefly</p>
<p style="text-align: right;">Page 1288</p> <p>1 Does that mean that the review that you</p> <p>2 conduct involves a delineation of all faults so that</p> <p>3 you can determine whether or not they are sufficiently</p> <p>4 transmissive or vertically extensive to allow</p> <p>5 migration?</p> <p>6 A Yes.</p> <p>7 Q Do you apply that analysis that we've just</p> <p>8 discussed that's in the Rule 331 to both known and</p> <p>9 suspected faults?</p> <p>10 A Yes, I would.</p> <p>11 Q All right.</p> <p>12 JUDGE EGAN: Mr. Walker, we're about</p> <p>13 five until 2:00, just a little bit before. Is this a</p> <p>14 good stopping place for you?</p> <p>15 MR. WALKER: That would be fine, Your</p> <p>16 Honor.</p> <p>17 JUDGE EGAN: All right. We'll reconvene</p> <p>18 at a quarter after 2:00 if I'm finished with the</p> <p>19 prehearing conference I've got to take a break for.</p> <p>20 Hopefully it will be through by then. Thank y'all.</p> <p>21 (Recess: 1:52 p.m. to 2:16 p.m.)</p> <p>22 JUDGE WALSTON: We'll go back on the</p> <p>23 record and you can proceed --</p> <p>24 MR. WALKER: Thank you, Your Honor.</p> <p>25 JUDGE WALSTON: Oh, you were asking</p>	<p style="text-align: right;">Page 1290</p> <p>1 explain to the Court what information you look at or</p> <p>2 what process you go through in making a determination</p> <p>3 as to whether presented faults are transmissive or</p> <p>4 not?</p> <p>5 A Well, in my opinion, faults in general are</p> <p>6 not transmissive. My experience is I've never seen a</p> <p>7 transmissive fault under what I'd call original</p> <p>8 conditions. A few cases I've seen horizontally</p> <p>9 transmissive faults when there was enough pressure</p> <p>10 differential in gas production from one side of the</p> <p>11 fault to the other, but that's the only transmissive</p> <p>12 faults I've ever seen.</p> <p>13 Q Okay. So I understand your response,</p> <p>14 Mr. Santos, to a great extent transmissivity -- a</p> <p>15 determination of transmissivity for you is largely</p> <p>16 based on your experience as a geologist?</p> <p>17 A That's right.</p> <p>18 Q Is there anything else that you would look at</p> <p>19 or anything else that you would apply, any information</p> <p>20 that you would look for or apply, in addition to you</p> <p>21 experience and training with respect to making that</p> <p>22 transmissivity determination?</p> <p>23 A Well, I would look at things such as whether</p> <p>24 hydrocarbons are pressed against the fault, if there</p> <p>25 was a difference in pressure from one side of the</p>

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<p style="text-align: right;">Page 1291</p> <p>1 fault to the other.</p> <p>2 Q All right. Thank you, sir. I don't want to</p> <p>3 probe anything that's outside your area of expertise,</p> <p>4 but let me ask you this: Have you been present</p> <p>5 through most of the testimony during this contested</p> <p>6 hearing?</p> <p>7 A Yes.</p> <p>8 Q So you've had an opportunity to listen to</p> <p>9 most, if not, all of the witnesses?</p> <p>10 A Yes.</p> <p>11 Q All right. With respect to the</p> <p>12 transmissivity issue of a fault, will that point or</p> <p>13 feature have an effect upon the extent -- for</p> <p>14 instance, this particular case -- of a cone of</p> <p>15 influence, the size or the extent of a cone of</p> <p>16 influence? Does transmissivity of a fault affect</p> <p>17 that?</p> <p>18 A I'm not sure about that.</p> <p>19 Q All right. And are you not sure because of</p> <p>20 engineering principles or that you're -- not part of</p> <p>21 your expertise or what?</p> <p>22 A I don't -- I don't know how a fault would</p> <p>23 affect the cone of influence.</p> <p>24 Q All right.</p> <p>25 JUDGE WALSTON: Mr. Santos, you need to</p>	<p style="text-align: right;">Page 1293</p> <p>1 A They're both fluids, yes.</p> <p>2 Q Very good. Okay. I don't want to expose too</p> <p>3 much of my ignorance here.</p> <p>4 All right. If we're talking about</p> <p>5 liquids, is it potentially possible for a liquid to</p> <p>6 migrate along a fault line?</p> <p>7 A In my experience I haven't seen that, no.</p> <p>8 Whether it's possible or not, I can't say.</p> <p>9 Q Okay. Well, let me ask you -- I accept your</p> <p>10 answer is not in your experience, but as a practicing</p> <p>11 geologist with a number of years of experience, you</p> <p>12 understand what a fault line is, I suppose, correct?</p> <p>13 A Yes.</p> <p>14 Q You understand that the throw of a fault</p> <p>15 suggests that one side of the fault is lower or higher</p> <p>16 than the other?</p> <p>17 A Right.</p> <p>18 Q Would that be -- at least in layman's</p> <p>19 terms -- to some extent a break in the horizon,</p> <p>20 subterranean horizon?</p> <p>21 A You could say that, yes.</p> <p>22 Q All right. And of course I think there's</p> <p>23 been some testimony that depending upon the nature of</p> <p>24 the horizon, the nature of the material, there could</p> <p>25 be some of this what has been referred to as smearing</p>
<p style="text-align: right;">Page 1292</p> <p>1 keep your voice up, if you can.</p> <p>2 Q (By Mr. Walker) Let me ask you this -- and</p> <p>3 we may move on -- but have you heard testimony during</p> <p>4 this contested hearing where the transmissivity issue</p> <p>5 of a fault was discussed by other witnesses with</p> <p>6 respect to the size of a cone of influence?</p> <p>7 A I do remember something about that, yes.</p> <p>8 Q All right. Would you agree with me that with</p> <p>9 respect to the size of a cone of influence that a</p> <p>10 transmissive -- a laterally transmissive fault would</p> <p>11 have a different effect than a laterally</p> <p>12 nontransmissive fault?</p> <p>13 A Yes.</p> <p>14 Q Is it possible that -- let me ask you this:</p> <p>15 Geologically, is a fluid potentially either a gas or a</p> <p>16 liquid?</p> <p>17 A Either a gas or liquid is a fluid --</p> <p>18 MR. RILEY: I'm sorry, I really -- my</p> <p>19 apologies, Mr. Santos. I can't hear you.</p> <p>20 JUDGE WALSTON: Does that microphone</p> <p>21 work?</p> <p>22 (Discussion off the record)</p> <p>23 Q (By Mr. Walker) Okay. I think we just</p> <p>24 covered the fact that a gas can be fluid and a liquid</p> <p>25 can be fluid -- or maybe they both are.</p>	<p style="text-align: right;">Page 1294</p> <p>1 along the fault line.</p> <p>2 A Yes.</p> <p>3 Q And would you just quickly tell us, from your</p> <p>4 perspective, what that smearing effect is?</p> <p>5 A Well, if you're talking about what would be</p> <p>6 in the fault plain, the shale from nearby beds could</p> <p>7 be, I guess, pulled along with the fault and pulled</p> <p>8 along the fault plain. But the -- since we're talking</p> <p>9 about sandstone, the sand could also be, I guess you</p> <p>10 would say, ground up and be in the fault plain also.</p> <p>11 Q Okay. And if the shale is pulled along the</p> <p>12 fault plain and smears, if you will, does that have,</p> <p>13 potentially at least, the effect of sort of sealing</p> <p>14 that fault -- that break?</p> <p>15 A Yes, that would make it impermeable.</p> <p>16 Q Okay. And if there was not smearing for</p> <p>17 whatever reason, but perhaps because of the material</p> <p>18 that was located at the fault -- if there was not</p> <p>19 smearing, would it be possible then that that break</p> <p>20 would not be impermeable?</p> <p>21 A Yes.</p> <p>22 Q All right. And if the break is not</p> <p>23 impermeable, would a liquid potentially migrate along</p> <p>24 it?</p> <p>25 A If the fault plain was open it could, yes.</p>

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<p style="text-align: right;">Page 1295</p> <p>1 Q All right. Mr. Santos, do you recall the 2 testimony of Dr. Hughbert Collier to the effect that 3 he located some 24 faults in the area of review? 4 A Yes. 5 Q And do you recall the cross-examination of 6 Mr. Riley -- on behalf of the applicant -- of 7 Dr. Collier? 8 A Yes. 9 Q Do you recall -- I think it may have been 10 yesterday -- that Dr. Collier -- I guess the word 11 would be admitted -- that one of his 24 discovered 12 faults in fact might not have been a fault. Do you 13 recall that testimony? 14 A I think so, yes. 15 Q I believe the record would suggest that it 16 was No. 14B on the Applicant's Exhibit -- I don't have 17 it in from of me -- but you do recall generally that 18 testimony, that a particular discovered or allegedly 19 discovered fault was potentially at least something 20 less than a fault? 21 A Yes. 22 Q Okay. Simple math then would leave 23 faults 23 that Dr. Collier had referenced in the area of review. 24 Would you agree with that figure? 25 A Yes.</p>	<p style="text-align: right;">Page 1297</p> <p>1 Q If in fact some 21 faults -- and let me 2 underline that word "if" -- if in fact some 21 faults 3 are present in the area of review, and if in fact 4 because they were not presented in the application, 5 you've not had an opportunity to assess them for 6 transmissivity issues, would that lack of opportunity 7 on your part deprive you of -- if not a necessary, 8 certainly an important aspect of your determination as 9 to whether or not an injection well site was 10 geologically suitable? 11 A Well, if those faults are there, that's 12 correct. 13 JUDGE EGAN: If what? 14 WITNESS SANTOS: If there are faults 15 there, that's correct. 16 MR. WALKER: Your Honor, I'll pass the 17 witness. 18 JUDGE EGAN: Mr. Forsberg, any cross? 19 MR. FORSBERG: Yes, Your Honor. 20 CROSS-EXAMINATION 21 BY MR. FORSBERG: 22 Q Good afternoon, Mr. Santos. 23 A Good afternoon. 24 Q The one thing I've learned about the geology 25 the last few days is that I know very little about</p>
<p style="text-align: right;">Page 1296</p> <p>1 Q Is it fair to say, Mr. Santos, that since two 2 faults were referenced in the applicant's materials, 3 and testimony here in this hearing so far by 4 Dr. Collier has suggested 21 additional faults in the 5 area of review -- would it be fair to say that you did 6 not evaluate those 21 other faults for issues of 7 transmissivity? 8 A If they were in fact faults, that's correct. 9 Q All right. 10 MR. RILEY: I'm sorry, I was distracted 11 for a moment. I didn't hear the witness' last answer. 12 I apologize. 13 WITNESS SANTOS: If they were in fact 14 faults. 15 Q (By Mr. Walker) Let me ask you, Mr. Santos, 16 since Rule 331 first requires that the applicant's map 17 show faults if known or suspected, and since the same 18 rule further on requires this evaluation of faults for 19 issues of transmissivity, would you say that the 20 presentation of mapping of faults and the analysis of 21 them by a person in your capacity would be at least 22 part of the process of determining whether an area for 23 siting of a Class I injection well was geologically 24 suitable? 25 A Yes.</p>	<p style="text-align: right;">Page 1298</p> <p>1 geology. So please forgive me in advance if any of 2 these questions don't necessarily sound extremely 3 educated, I guess. 4 You had mentioned that you had worked on 5 or reviewed a couple of other UIC applications 6 previously, Class I? 7 A Yes. 8 Q Is that in regards to geology only or -- 9 A No, both of those I was the project manager. 10 Q Okay. How many Class I UIC wells have you 11 looked at with regards to geology? 12 A I don't know an exact number. When we look 13 at renewals, we also look at the geology again. 14 Q Okay. 15 A So there's several. 16 Q Okay. Do you know offhand how many of those 17 permits ultimately were denied? 18 A I don't recall any being denied. 19 Q Okay. So as far as you recollect, every 20 application you've reviewed in regards to geology both 21 renewal and new, were ultimately issued? 22 A That's correct. 23 Q Would you agree with me that there is an 24 underground source of drinking water that has been 25 referred to as the Catahoula aquifer directly above</p>

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<p style="text-align: right;">Page 1299</p> <p>1 the confining zone?</p> <p>2 A Yes.</p> <p>3 Q Would you agree with me that there is a</p> <p>4 requirement that there be -- that the confining zone</p> <p>5 is separated from base of USDW by permeable and less</p> <p>6 permeable strata that will provide an added layer of</p> <p>7 protection for the USDW?</p> <p>8 A Yes, I agree.</p> <p>9 Q What is the protection that exists between</p> <p>10 the -- between the injection zones and the USDW known</p> <p>11 as the Catahoula aquifer?</p> <p>12 A The cross sections in the application show a</p> <p>13 200 to 300-foot zone between the two with at least one</p> <p>14 sand in it.</p> <p>15 Q And is that a nonpermeable -- that's a</p> <p>16 permeable-type layer, correct?</p> <p>17 A Yes, I think that it's permeable and</p> <p>18 nonpermeable -- or less permeable.</p> <p>19 Q And you're satisfied in your review of the</p> <p>20 application that that satisfies that requirement that</p> <p>21 there be a less permeable and a permeable layer of</p> <p>22 protection?</p> <p>23 A Yes, in my opinion it does.</p> <p>24 Q Okay. And when you considered that, did you</p> <p>25 consider the potential for oil wells unknown or known</p>	<p style="text-align: right;">Page 1301</p> <p>1 Q Okay. So based upon your testimony here can</p> <p>2 you give me just sort of a basic definition of this</p> <p>3 unlocated borehole?</p> <p>4 A Well, that would be one that -- as I say</p> <p>5 would be in the area of review but is not recognized,</p> <p>6 not in the records or the files.</p> <p>7 Q I'm sorry, I didn't mean to cut you off. So</p> <p>8 do you have to assume then that these exist?</p> <p>9 A I wouldn't assume they exist in this</p> <p>10 particular area, but that's put in just for the</p> <p>11 possibility that it might exist.</p> <p>12 Q Are you required by rule to assume that there</p> <p>13 are unlocated boreholes?</p> <p>14 A I can't think of a rule that requires that,</p> <p>15 no.</p> <p>16 Q So when you reviewed TexCom's application,</p> <p>17 did you consider the existence of unlocated boreholes?</p> <p>18 A Yes, I looked for this what we call bleed-off</p> <p>19 zone for that possibility.</p> <p>20 Q Okay. What was your conclusion in that</p> <p>21 regards?</p> <p>22 A What do you mean?</p> <p>23 Q Well, you say you -- you were looking for</p> <p>24 this bleed-off zone, correct? Is that what you --</p> <p>25 A Yes.</p>
<p style="text-align: right;">Page 1300</p> <p>1 that may have been drilled through some of those</p> <p>2 zones?</p> <p>3 A Yes.</p> <p>4 Q Okay. And just for my knowledge, what is an</p> <p>5 unlocated borehole?</p> <p>6 A And unlocated borehole?</p> <p>7 Q Yes.</p> <p>8 A I don't know a definition of it. It sounds</p> <p>9 like a borehole that is known to be drilled but the</p> <p>10 location is not exactly known.</p> <p>11 Q Okay. Do you have your prefired testimony in</p> <p>12 front of you?</p> <p>13 A Yes.</p> <p>14 Q Can you turn to Page 12, please?</p> <p>15 A Okay.</p> <p>16 Q On Line 7 I see the term "unlocated</p> <p>17 borehole." Can you explain what you meant when you</p> <p>18 testified with regards to that term?</p> <p>19 A Yes. It means this zone of permeable and</p> <p>20 less permeable strata is what we call the bleed-off</p> <p>21 zone. So in this case, if for some reason some</p> <p>22 wastewater would get through all of our other</p> <p>23 protections, this would provide a place for that to</p> <p>24 bleed off and go into the less -- go into the</p> <p>25 permeable zones before it got into the USDW.</p>	<p style="text-align: right;">Page 1302</p> <p>1 Q Did you locate such an area?</p> <p>2 A Well, as I said, the 2 or 300 feet between</p> <p>3 the top of the injection zone and the base of the</p> <p>4 confining zone.</p> <p>5 Q Okay. I'm not trying to -- this is why I</p> <p>6 prefaced with my lack of knowledge on geology. Is it</p> <p>7 then your conclusion that there are not unlocated</p> <p>8 boreholes in the area that you -- in the -- well, in</p> <p>9 the area of review?</p> <p>10 A I think what I mean is that I'm not assuming</p> <p>11 there are, but the bleed-off zone would take care of</p> <p>12 that possibility if there was.</p> <p>13 MR. FORSBERG: Thank you. I'll pass the</p> <p>14 witness.</p> <p>15 JUDGE EGAN: Ms. Collins?</p> <p>16 MS. COLLINS: No questions, thank you.</p> <p>17 JUDGE EGAN: Mr. Williams?</p> <p>18 MR. WILLIAMS: No redirect.</p> <p>19 JUDGE EGAN: Then you're excused --</p> <p>20 MR. RILEY: I was talking to John. I'm</p> <p>21 sorry.</p> <p>22 JUDGE EGAN: Okay.</p> <p>23 MS. GOSS: The Executive Director calls</p> <p>24 Mike Graber.</p> <p>25 (Witness sworn)</p>

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<p>1 JUDGE EGAN: Would you state your name 2 for the record? 3 WITNESS GRABER: Michael Graeber. 4 JUDGE EGAN: You may proceed. 5 MICHAEL GRAEBER, 6 having been duly sworn, testified as follows: 7 DIRECT EXAMINATION 8 BY MS. GOSS: 9 Q Good afternoon. Did you prepare prefiled 10 testimony in this case? 11 A Yes, I did. 12 Q Would you see if you can locate that notebook 13 there in front of you, the Executive Director's 14 prefiled exhibits? 15 A Okay. 16 Q And look at Tab 14. 17 A I've got it. 18 Q Would you identify that please for the 19 record? 20 A ED -- ED-14 is my prefiled testimony. 21 Q And do you have any changes that you wish to 22 make to that testimony? 23 A No. 24 Q And is that testimony the same that you would 25 give if you were testifying here in this hearing</p>	<p>1 comments received on the application that you reviewed 2 in this case? 3 A Yes. 4 Q Thank you. 5 MS. GOSS: The Executive Director would 6 like to offer Exhibits 14 through 18. 7 JUDGE EGAN: Are there any objections to 8 14 through 18? 9 ED Exhibits 14, 15, 16, 17 and 18 are 10 admitted. 11 (ED Exhibit Nos. 14 through 18 admitted) 12 MS. GOSS: Pass the witness, Your Honor. 13 JUDGE EGAN: Mr. Riley? 14 MR. RILEY: I have no questions. I pass 15 the witness. 16 JUDGE EGAN: Okay. Mr. Gershon. 17 MR. GERSHON: I have a few questions. 18 CROSS-EXAMINATION 19 BY MR. GERSHON: 20 Q Good afternoon, Mr. Graeber. 21 A Good afternoon. 22 Q I'm Michael Gershon here with the Lone Star 23 Groundwater Conservation District. 24 Is it my understanding that you have 25 been with TCEQ or one of its predecessors for about 15</p>
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<p>1 today? 2 A Yes. 3 Q And would you please look at the following 4 exhibits starting with No. 17? 5 A Okay. 6 Q Please identify that exhibit for the record? 7 A Exhibit ED-17 is the technical summary and 8 Executive Director's preliminary decision. 9 Q Thank you. And Exhibit 18 -- Tab 18, please. 10 A Exhibit ED-18 is the final draft permit that 11 we prepared for this facility. 12 MS. GOSS: Thank you. The Executive 13 Director offers Exhibits -- did I get them all? 14 Pardon me, I skipped one. 15 JUDGE EGAN: I think you skipped 2, 15 16 and 16. 17 Q (By Ms. Goss) Mr. Graeber, we have an 18 important exhibit there. I skipped Exhibit No. 14 19 (sic). Would you identify that, please, for the 20 record? 21 A Exhibit ED-15 is my resume. 22 Q And Exhibit 16, please? 23 A Exhibit ED-16 is a document titled "Executive 24 Director's Response to Public Comment." 25 Q Was this response prepared in response to</p>	<p>1 years working in either the MSW -- the municipal solid 2 waste division or the industrial hazardous waste 3 division? 4 A I've been with -- I've been with the state 5 for the past 20 years working with the Health 6 Department and TCEQ and its predecessor agencies in 7 waste management. 8 Q Okay. And do I have it right that you've 9 worked on three nonhazardous solid waste permit 10 applications? 11 A Yes. 12 Q Does that include TexCom's application before 13 us today? 14 A Yes. 15 Q What were the other two? 16 A One was for a facility in Houston that is 17 basically a transfer facility for waste. They bring 18 it in and ship it back out. And the other was a -- 19 Q What was the name of that applicant? 20 A CES Environmental Services. 21 And the other was for an outfit called 22 Intergulf Corporation. 23 JUDGE EGAN: What was it called? 24 WITNESS GRABER: Intergulf. It's one 25 word.</p>

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<p style="text-align: right;">Page 1307</p> <p>1 Q (By Mr. Gershon) Let me make sure I 2 understand what CES Environmental Services did. What 3 was the type of disposal involved? You mentioned it's 4 a transfer facility. 5 A Well, they bring in mostly liquid waste and 6 store it, combine it, put it together and ship it off 7 to a disposal or treatment facility. They're a 8 middleman on the smaller generators. 9 Q Okay. And tell me about Intergulf 10 Corporation. What was the nature of the disposal 11 involved? Was it a landfill, incineration or 12 injection well? 13 A No, they're basically the same thing, if I 14 recall right. 15 Q They were a transfer facility as well? 16 A Well, they bring it in and store it and 17 process it and ship it back out. 18 Q It's my understanding from your testimony 19 that your review in this case does not differ in any 20 significant way from your review of other applications 21 you have reviewed, and I'm quoting you -- actually, I 22 think that came from your deposition on written 23 questions. Do you stand behind that statement? 24 A Yes. 25 Q Now, when you make that statement, are the</p>	<p style="text-align: right;">Page 1309</p> <p>1 JUDGE EGAN: All right. Mr. Forsberg? 2 MR. FORSBERG: Just a few, Your Honor. 3 CROSS-EXAMINATION 4 BY MR. FORSBERG: 5 Q Good afternoon, Mr. Graeber. 6 A Good afternoon. 7 Q Can you state what a compliance history is? 8 A A compliance history is a document that is -- 9 lists all the activities on a facility that is in 10 operation. So whether it be inspections, orders that 11 may have -- may or may not have been written, 12 deficiencies that they had to correct and that kind of 13 stuff. 14 Q Okay. And is there a -- sort of a grade 15 that's issued for compliance history? 16 A They do rate the facilities, yes. 17 Q Okay. Is there a rating for the TexCom 18 facility as it exists today? 19 A I don't recall that we had a compliance 20 history on this facility since it's non-existent. 21 Q And with regards to your testimony, we're 22 talking about the surface operation? 23 A Yes. 24 Q Okay. And a -- there could be a grade with 25 regards -- that's probably not the right term -- but</p>
<p style="text-align: right;">Page 1308</p> <p>1 other applications you're referring to the other two 2 nonhazardous industrial solid waste permit 3 applications that you just listed? 4 A That and the several hazardous waste 5 applications that I've reviewed. 6 Q Did you say hazardous waste? 7 A Hazardous waste, yes. 8 Q So what you're saying -- when you say that 9 your review does not differ in any significant way 10 from your review of other applications you have 11 reviewed, you're talking about the review you 12 conduct -- comparing your review to the review you 13 conducted with CES Environmental Services' 14 application, Intergulf Corporation's applications, and 15 the applications for hazardous waste? 16 A The way I review it, yes. 17 Q Okay. Is it your understanding that the 18 standards TCEQ applies to all of industrial solid 19 waste permit applications, irrespective of the type of 20 disposal, are substantially similar? 21 A Yes. For industrial solid waste, yes. 22 MR. GERSHON: I pass the witness. 23 JUDGE EGAN: All right. Mr. Walker? 24 MR. WALKER: I have no questions for 25 this witness.</p>	<p style="text-align: right;">Page 1310</p> <p>1 with regards to the underground injection well that 2 exists? 3 A There could be. 4 Q And if a compliance history is shown to be 5 average, does that necessarily mean that there is -- 6 could that mean that there's no compliance history? 7 A No, that means that they -- I'm not -- I'm 8 not real sure how they -- how the terminology between 9 average and poor goes. But it basically means that 10 they operate in accordance with the rules and if 11 there's any problems, they fix them as far as I know. 12 Q Are you familiar with the term "average by 13 default"? 14 A I think I've seen that written on some 15 compliance issues that I've gotten. 16 Q Okay. 17 JUDGE EGAN: I can't hear you. 18 WITNESS GRABER: I think I've seen that 19 written on some of the compliance issues that I've 20 seen. 21 Q (By Mr. Forsberg) Do you have any personal 22 knowledge of what that means? 23 A No. 24 Q When you reviewed the surface facility 25 operation application for TexCom, did you look at how</p>

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<p style="text-align: right;">Page 1311</p> <p>1 the gauges, pumps -- did you look at specific settings 2 or specific requirements for those types of things? 3 A No, not in that detail. 4 Q Okay. You understand that there's a maximum 5 injection pressure that would be allowed under the 6 proposed permit? 7 A I've heard that, yes. 8 Q Do you not know that for a fact? 9 A Well, I didn't look at those applications and 10 I'm not familiar with everything that goes into those 11 applications. 12 Q Okay. Would you not be concerned that if 13 there was some sort of maximum injection pressure that 14 there was not some controls in the surface facility to 15 regulate the injection pressure? 16 A They would probably have to have some 17 controls on some unit in there that would control 18 that, yes. 19 Q Where does that -- in your recollection does 20 that appear in the TexCom application? 21 A No. 22 Q Is it typical for that sort of thing to 23 appear in an application? 24 A I haven't -- I haven't noted that kind of 25 detail in applications.</p>	<p style="text-align: right;">Page 1313</p> <p>1 A Yes. 2 Q Okay. Do you consider things like the 3 appearance of the site to neighboring residential 4 areas? 5 A No. 6 Q Would you agree with me that there are 7 residential around the facility, the proposed the 8 facility? 9 A I don't think I can agree with that because I 10 haven't seen the area. 11 Q You've never actually gone to the site? 12 A No. 13 Q There's no rule in place that requires you to 14 go to the site? 15 A No. 16 MR. FORSBERG: That's all I have, Your 17 Honor. 18 JUDGE EGAN: Ms. Collins? 19 MS. COLLINS: No questions. Thank you. 20 JUDGE EGAN: Any redirect? 21 MS. GOSS: No, Your Honor. 22 JUDGE EGAN: You're excused. Thank you. 23 MR. WILLIAMS: Your Honor, at this time 24 the Executive Director rests. 25 MR. RILEY: Could we take a few-minute</p>
<p style="text-align: right;">Page 1312</p> <p>1 Q Okay. Do you know if there are any flow 2 control devices that would regulate the 3 gallons-per-minute that are injected into the 4 underground injection wells? 5 A There are some pumps on the surface facility, 6 yes. 7 Q And is there a specific flow control on the 8 surface facility that would regulate a maximum 9 gallons-per-minute? 10 A I'm not aware that there is other than the 11 pump itself. 12 Q Are there any rules that you look to with 13 regards to what kind of requirements are necessary for 14 gauges and pumps and injection pressure control on the 15 surface facility applications? 16 A Not that I'm aware of. 17 Q Is it your understanding that no such rules 18 exist? 19 A Yes. 20 Q Did you look at any issues with regards to 21 odor or noise at the facility, the proposed facility? 22 A Other than what was identified in the 23 application? 24 Q That's the extent of it, what's in the 25 application?</p>	<p style="text-align: right;">Page 1314</p> <p>1 break and then begin the rebuttal case? At this point 2 I anticipate three witnesses -- and perhaps it's 3 appropriate to have the discussion about Mr. Graves, 4 the witness we would call to rebut evidence of traffic 5 concerns raised in the prefiled testimony and 6 throughout cross-examination in the case. I don't 7 know if you would like to take it up now or after the 8 break I just requested, but since it was on my mind I 9 though I would -- 10 JUDGE EGAN: Has everybody seen and had 11 a chance to look at the prefiled? 12 MR. FORSBERG: I have, Your Honor. 13 JUDGE EGAN: Okay. And I might remind 14 y'all to take a look at Paragraph 2 of our last order 15 which dealt with the prehearing conference, and I've 16 got a copy up here if you would like to look at it -- 17 or Section 2. We can take a ten-minute break -- 18 MR. RILEY: That would be great. 19 JUDGE EGAN: Be back at five after. 20 Would that be enough time? 21 MR. RILEY: That certainly would. Thank 22 you. 23 JUDGE EGAN: Then we'll come back at 24 five after 3:00. 25 (Recess: 2:56 p.m. to 3:12 p.m.)</p>

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<p style="text-align: right;">Page 1315</p> <p>1 JUDGE EGAN: We're back on the record, 2 and we're looking at rebuttal. 3 Mr. Riley? 4 MR. RILEY: Thank you, Your Honor. 5 Before we begin rebuttal, do we want to take up the 6 issue -- I think there is an objection to calling 7 Mr. Scott Graves, the witness that we've identified 8 last night as Mr. Forsberg indicated by name, and we 9 anticipate calling him as our third witness this 10 afternoon. I don't know if it's convenient to take it 11 up now or if you'd rather do it -- 12 JUDGE EGAN: Let's just do it when you 13 call him. 14 MR. RILEY: Fine. At this time we call 15 Dr. Bruce Langhus back to the stand. 16 JUDGE EGAN: I believe I excused the 17 witness, so would you swear him back in, please? 18 (Witness sworn) 19 JUDGE EGAN: Go ahead. 20 MR. RILEY: Thank you. 21 22 23 24 25</p>	<p style="text-align: right;">Page 1317</p> <p>1 A Yes, sir. 2 Q And as part of that same effort, was there 3 also a spreadsheet compiled that corresponds by number 4 to the various segments identified by Dr. Collier? 5 A Yes, sir. 6 MR. RILEY: At this time I'd ask Mr. Lee 7 to have an exhibit marked as Applicant's Exhibit 75. 8 (TexCom Exhibit No. 75 marked) 9 JUDGE EGAN: Applicant TexCom Exhibit 10 75? 11 Q (By Mr. Riley) Dr. Langhus, could you take a 12 look at Exhibit 75, TexCom Exhibit 75, and assure 13 yourself that it is the exhibit that you have worked 14 on that corresponds to each of the segments we 15 previously discussed that Dr. Collier identified in 16 the area of review claiming they were faults? 17 A Yes, sir. 18 Q And are you -- is this a spreadsheet that you 19 indeed adopt as something you developed and those are 20 your notes in the far right-hand column? 21 A Yes, sir. 22 MR. RILEY: Your Honor, at this time I 23 move Exhibit 75 into evidence. 24 JUDGE EGAN: Any objections to applicant 25 TexCom Exhibit No. 75?</p>
<p style="text-align: right;">Page 1316</p> <p>1 REBUTTAL PRESENTATION ON BEHALF OF 2 TEXCOM GULF DISPOSAL 3 BRUCE LANGHUS, 4 having been duly sworn, testified as follows: 5 DIRECT EXAMINATION 6 BY MR. RILEY: 7 Q Good afternoon, Dr. Langhus. 8 A Good afternoon, Counselor. 9 Q Dr. Langhus, before you -- or somewhere in 10 that general area -- down that side of the room you 11 will most likely find a copy of TexCom Exhibit 74, 12 which is a duplicate smaller version of Protestant 13 Exhibit 1P, a depiction of some faults that 14 Dr. Collier believes exist in the area of review. 15 A Yes, sir. 16 Q Have you located that Exhibit 74? 17 A Yes. 18 Q And have you seen this exhibit previously? 19 A Yes, sir. 20 Q Is it accurate, Dr. Langhus -- just to get 21 you oriented -- to say that there was an effort 22 made -- I think you and Mr. Lee were involved most 23 directly -- in trying to just affix or label each of 24 the segments identified by Dr. Collier as alleged 25 faults in the area of review?</p>	<p style="text-align: right;">Page 1318</p> <p>1 If there's no objection, then it is 2 admitted. 3 (TexCom Exhibit No. 75 admitted) 4 MR. RILEY: Thank you. 5 Q (By Mr. Riley) Doctor, let's go through 6 Exhibit 75, and I'll try to do it expeditiously, but 7 that's not to short circuit or suggest that there 8 isn't -- well, let's just go through it. 9 Let's start with No. 1. And if I'm 10 following along, the Item No. 1 or Segment No. 1 11 refers to a dark green color as depicted on Exhibit 1P 12 by Dr. Collier, correct? 13 A Yes, sir. 14 Q And did you review that line, so to speak, or 15 the line on Exhibit 1P and could you tell us your 16 opinion regarding whether that line, either from your 17 independent analysis or analysis of the source 18 material utilized by Dr. Collier, constitutes a fault 19 in your opinion? 20 A Looking at the source data, which was the -- 21 marked "Completion Data and Water Map" dated January 22 1, 1944, I do not think this is a fault because it was 23 marked with only 8 feet of offset by the two closest 24 wells, and that appears to me to be simply regional 25 dip. So the offset would be zero.</p>

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<p style="text-align: right;">Page 1319</p> <p>1 Q And could you explain what you mean by 2 regional dip? 3 A In the area of the Conroe field the strata 4 are dipping into the Gulf of Mexico, except for the 5 domal feature itself of the Conroe field. But moving 6 away from the Conroe field, you have simply southerly 7 regional dip. 8 Q Do I understand then that as you move from, 9 let's say, the applicant's property or the TexCom 10 proposed site toward the Gulf of Mexico that the land 11 slopes downward toward the Gulf of Mexico? 12 A Except for the local perturbation of the 13 Conroe dome. 14 Q So the variation in terms of offset that at 15 least Dr. Collier as interpreted as a fault, that is 16 an 8-foot offset and you think that's related to the 17 sloping feature down to the Gulf of Mexico? 18 A It was actually interpreted by the makers of 19 that January 1944 map. I don't know who that was, 20 but, yes, they had interpreted a fault there. 21 Q Okay. They interpret it as a fault, but it's 22 your opinion that it relates to regional dip? 23 A Correct. 24 Q And what was the source material again for 25 Dr. Collier's identification of that as -- of that</p>	<p style="text-align: right;">Page 1321</p> <p>1 offset marked, so I have no idea what -- what the 2 potential -- or what the interpreted off-set is on 3 this map. The map again is -- it's marked on the 4 spreadsheet, but the map is made up at the top of the 5 Pliocene in the fresh water aquifers, about 46 -- 6 4700 feet above the upper Cockfield. 7 Q And these are the lines -- were you present 8 when Dr. Collier testified? 9 A Yes. 10 Q These are the lines on Dr. Collier's map that 11 we discussed at some length as to whether they were as 12 depicted aligned with faults that were mapped in lower 13 horizons, correct? 14 A Correct. 15 Q And what is your opinion with regard to 16 whether -- with regard to whether those faults -- 17 whether they are faults or not -- these lines drawn by 18 the Exxon geologists in the 2002 materials actually 19 would align with deeper subsurface faults? 20 A I don't see the evidence for that. These 21 map -- these mapped features, fault-like features, are 22 so -- so much higher in the section and lacking any 23 precise data about the attitude of the faults, you 24 would not know where exactly to project these lines 25 into, say, the upper Cockfield.</p>
<p style="text-align: right;">Page 1320</p> <p>1 line as a fault? 2 A It was a map marked "Completion Data and 3 Water Map," 1944, January 1. I believe he said he 4 found that in the Railroad Commission files. 5 Q Prior to Dr. Collier unearthing that 6 document, had you seen that document previously? 7 A No. 8 Q Let's move to item -- or Segment 2, which 9 is -- the source of that information, as I understand 10 the spreadsheet, is the Exxon application to the 11 Railroad Commission of 2002, correct? 12 A Correct. 13 Q Have you reviewed the Exxon application in 14 2002 to the Railroad Commission that underlies that 15 information or that was -- where that information was 16 included? 17 A Yes. 18 Q Had you reviewed it prior to the -- prior to 19 Dr. Collier identifying it? 20 A Yes. 21 Q With respect to Segment 2, could you tell us 22 what your observations are and what your conclusions 23 are as to whether it constitutes a fault? 24 A This line on the map interpreted as a fault 25 by Exxon's geologists had no throw marked, had no</p>	<p style="text-align: right;">Page 1322</p> <p>1 Q In your opinion, Doctor, would it even be 2 reasonable to project them into -- to lower strata? 3 A No, I see no evidence for that. 4 Q Particularly with respect to the Jackson 5 shale. Does that bear on your opinion at all? 6 A It certainly does; 1100 feet of a very low 7 strength mudstones and shales would be -- it would be 8 nearly impossible to project or to transmit a fault 9 through that. 10 Q In the -- on Item 2 in your spreadsheet, I 11 think you already explained that there's no offset 12 indicated in the Exxon materials, correct? 13 A For Line No. 2, that's correct. 14 Q All right. And then you ask -- the question 15 or the spreadsheet column -- was it properly 16 transcribed? Tell us what that column is intended to 17 express. 18 A Well, it's an attempt to put a narrative to 19 the accuracy of map -- or Exhibit 1P to the original 20 source data. 21 Q So is it your opinion that even -- well, is 22 it your opinion that the Exhibit 1P correlates 23 correctly to the original source data as to the 24 location of Segment 2? 25 A Not precisely. There's -- at the eastern</p>

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<p style="text-align: right;">Page 1323</p> <p>1 tail there's a -- there's an upsweep to the line that 2 should not be there. It should be sweeping downward. 3 Q And you did not find that in Exhibit 1P. Is 4 that correct? 5 A Correct. 6 Q And what does the column "Cut With Wells" 7 mean? What significance does that column have in this 8 spreadsheet? 9 A I wanted to note which -- which of the 10 interpreted faults between these various source 11 documents, which of these -- which of these features 12 actually cut wells. For me that's one of the really 13 important criteria for telling whether or not a fault 14 is there. 15 As Dr. Collier mentioned, there are a 16 number of criteria for identifying a fault. Every 17 crack in the payment is not a fault, just like every 18 line called a fault on every map is not a fault. And 19 one of the things that -- one of the criteria that I 20 place a lot of emphasis on is whether or not wells are 21 actually cut. 22 Another criteria would be its presence 23 on 3-D seismic, for instance. We don't have any 3-D 24 seismic here, but that's another very important 25 locator, a very important determinant for whether or</p>	<p style="text-align: right;">Page 1325</p> <p>1 Q And is it accurate to say this is a general 2 depiction of the strata beneath the TexCom proposed 3 site? 4 A Generally. 5 Q In response to Judge Egan's question, let's 6 use the example of a fault to the far right-hand 7 portion of the documents. Do you find that there? 8 A Yes. 9 Q When you say "cut by a fault," could you 10 explain in the context of this diagram where the well 11 would be in relationship to the fault? 12 A The fault would be essentially vertical, and 13 would cut directly through the plain of the fault or 14 the line of the fault. 15 JUDGE EGAN: You mean the well would 16 be -- 17 WITNESS LANGHUS: Right. Yeah. The 18 borehole would be vertical. So it would intersect 19 that -- the line of the fault somewhere along it. And 20 in that intersection there would be missing strata. 21 Q (By Mr. Riley) That would be physical 22 evidence if a core were taken from that well of the 23 existence of a fault, correct? 24 A Not so much a core. That would be -- that 25 would be asking a lot of the -- of luck. But in</p>
<p style="text-align: right;">Page 1324</p> <p>1 not a fault is -- actually exists in the subject area. 2 JUDGE EGAN: When you say "cut," what do 3 you mean? 4 WITNESS LANGHUS: If it cuts -- these 5 faults in the Conroe area are all normal faults. That 6 is, the down-thrown side is the direction of dip. 7 There are know reverse faults, thrust faults, the kind 8 that you see in the mountains of Wyoming, for 9 instance, where hard rocks have been compressed 10 together and the fault has made a mountain, 11 essentially. These are all slumping features where 12 the down-thrown side is, like I say, in the down slope 13 direction. 14 And when that -- those kinds of faults 15 are intersected by wells, there is missing section in 16 the well. And so this is a way to precisely locate 17 the fault and to tell its offset. 18 Q Could you take a look at TexCom Exhibit 72 19 while we're on this topic? It's the graphic depiction 20 of the various strata below -- I think perhaps it's up 21 with the reporter. 22 A I found it. 23 Q And, Doctor, have you seen this exhibit 24 previously? 25 A Yes.</p>	<p style="text-align: right;">Page 1326</p> <p>1 wireline logs, geophysical logs, it could be found. 2 Q All right. So you'd put that wireline tool 3 that Dr. Collier and I discussed in the borehole and 4 you would find some layer missing. Is that correct? 5 A Correct. 6 Q Let's proceed, Doctor. Well, actually, one 7 more question, I think, on this. When you were 8 talking about the up-thrown and down-thrown side, if 9 the domal feature were to the right-hand side of this 10 diagram -- 11 A Correct. 12 Q -- did I understand you to say that the side 13 of a fault toward the domal feature would be a 14 slumping type fault or am I misunderstanding -- 15 A No, on the fault itself, the way that the 16 fault is sloping towards the right so that the 17 down-thrown side is on the right. If it were a 18 reverse fault the up-thrown side would be on that side 19 towards the slope. And they exist in -- I don't want 20 to get into that. 21 JUDGE EGAN: So the fault caused part of 22 this to slip downwards? 23 WITNESS LANGHUS: Correct. Correct. 24 Q (By Mr. Riley) And so the fault -- am I 25 correct the fault itself -- the plain of the fault</p>

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<p style="text-align: right;">Page 1327</p> <p>1 would tilt away from the domal feature? Is that --</p> <p>2 A Here it's tilting towards the domal feature.</p> <p>3 It depends upon just where you are in the dome, what</p> <p>4 kind of geometry you have, whether or not the fault</p> <p>5 would -- which way that dip is.</p> <p>6 Q I'll come back to that in just a minute for</p> <p>7 some questions regarding the 4400-foot fault, but</p> <p>8 let's put that aside for now and return to the</p> <p>9 spreadsheet and resume our discussion of Item 3, also</p> <p>10 an orange line that is depicted on Dr. Collier's</p> <p>11 Exhibit 1P. Do you find that on 1P? It's kind of to</p> <p>12 the middle north -- to the north --</p> <p>13 A Oh, oh, yes, I see.</p> <p>14 Q And what is your conclusion or evaluation of</p> <p>15 that particular segment or that line drawn by</p> <p>16 Dr. Collier?</p> <p>17 A I don't see this on the Exxon map. It's</p> <p>18 either -- it's either mislocated or something.</p> <p>19 Q So it's -- you don't even find this on</p> <p>20 the Exxon -- in the Exxon source material. Is that</p> <p>21 correct?</p> <p>22 A Correct.</p> <p>23 Q Certainly not in the location that</p> <p>24 Dr. Collier depicted, correct?</p> <p>25 A Yes.</p>	<p style="text-align: right;">Page 1329</p> <p>1 A Yes, sir.</p> <p>2 Q And assuming you were correct in how</p> <p>3 Dr. Collier -- or the source material for</p> <p>4 Dr. Collier -- again the offset indicates a 30-foot --</p> <p>5 excuse me, the column indicates a 30-foot offset,</p> <p>6 correct?</p> <p>7 A Yes.</p> <p>8 Q And do you have any opinion as to whether</p> <p>9 that 30-foot offset would be expressed in the</p> <p>10 Cockfield -- the Cockfield formation?</p> <p>11 A I would find that highly unlikely.</p> <p>12 Q Could you explain why?</p> <p>13 A Because it would have to express itself --</p> <p>14 transmit itself -- and it's already -- has a low</p> <p>15 degree of throw of offset. It would have to express</p> <p>16 itself some 4600 feet into the subsurface, especially</p> <p>17 through that 1100-foot shale layer.</p> <p>18 Q Do you know if it's a fault at all based on</p> <p>19 your review of the Exxon materials?</p> <p>20 A No, I do not.</p> <p>21 Q Item No. 4, it seems to -- did we just did</p> <p>22 that?</p> <p>23 A Yeah, we --</p> <p>24 Q I apologize. Item No. 5. Again the Exxon</p> <p>25 application of 2002 is the source information. Could</p>
<p style="text-align: right;">Page 1328</p> <p>1 Q In the column labeled "Notes" there are, I</p> <p>2 think, a couple of times -- at least with respect to</p> <p>3 the 2002 application by Exxon -- that there were other</p> <p>4 lines drawn by Exxon on its maps submitted to the</p> <p>5 Railroad Commission. Is that correct?</p> <p>6 A Correct.</p> <p>7 Q And you found those lines that were not</p> <p>8 depicted on Exhibit 1P. Is that correct?</p> <p>9 A That's correct.</p> <p>10 Q Do you have any idea why Dr. Collier selected</p> <p>11 certain lines and neglected to put other lines on his</p> <p>12 map?</p> <p>13 A No, I'm not sure what his criteria were.</p> <p>14 Q So based on your analysis and review of the</p> <p>15 source material, you're not able to distinguish why</p> <p>16 some lines were put on and some lines were put off,</p> <p>17 but clearly some were and some were not?</p> <p>18 A Correct.</p> <p>19 Q Let's continue to Item No. 4. You were able</p> <p>20 to find this, if I'm reading the spreadsheet</p> <p>21 correctly, on the Exxon source materials and your</p> <p>22 notation is that it's slightly mislocated, so I assume</p> <p>23 that you had to do some interpretation of the lines on</p> <p>24 the Exxon map to correlate that with the lines on</p> <p>25 Exhibit 1P. Is that correct?</p>	<p style="text-align: right;">Page 1330</p> <p>1 you tell us what your observations were regarding this</p> <p>2 line drawn by Dr. Collier?</p> <p>3 A This was located as shown on the -- on the</p> <p>4 source document. It had a throw of 10 feet --</p> <p>5 vertical offset of 10 feet.</p> <p>6 Q Is it your opinion, Doctor, that that line,</p> <p>7 even in the Exxon source materials, indicates a fault</p> <p>8 in the area of review?</p> <p>9 A No.</p> <p>10 Q Now, those -- as we discussed, the horizon</p> <p>11 map and the 2002 materials is substantially above the</p> <p>12 injection zone, correct?</p> <p>13 A Yes.</p> <p>14 Q Let's move to Item 6. Now -- I'm sorry,</p> <p>15 let's go back a minute. Mr. Walker was asking some</p> <p>16 questions of a TCEQ witness a short while ago about</p> <p>17 the requirements of the rules and certain rules</p> <p>18 referring to identification of suspected faults. Is</p> <p>19 that correct?</p> <p>20 A That's correct.</p> <p>21 Q And with -- in particular Mr. Walker asked</p> <p>22 questions about a rule that I'll have to pull out to</p> <p>23 get the wording exact but it referred to faults in the</p> <p>24 injection zone. Do you know that TCEQ rule?</p> <p>25 A Yes.</p>

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<p>1 Q And is it your testimony that none of these</p> <p>2 faults, even if indeed they do exist in the Exxon</p> <p>3 materials, are in the injection zone?</p> <p>4 A I believe that the two red faults as shown on</p> <p>5 IP probably do cut the injection zone.</p> <p>6 Q Okay. I'm sorry, I was referring to the</p> <p>7 orange lines. I should have been more clear.</p> <p>8 A I'm sorry. No.</p> <p>9 Q Let's move to the light green lines drawn by</p> <p>10 Dr. Collier from his Geomap information. Is it your</p> <p>11 understanding, Dr. Langhus, that Geomap is public</p> <p>12 information?</p> <p>13 A No, it's not. It's proprietary.</p> <p>14 Q In spite of the fact that it's not publicly</p> <p>15 available in my understanding of how this information</p> <p>16 was obtained, have you reviewed that material as part</p> <p>17 of this case?</p> <p>18 A I did.</p> <p>19 JUDGE EGAN: Now, I don't expect to go</p> <p>20 very deeply into this, but it is subject of the</p> <p>21 protective order. Is there any request to invoke the</p> <p>22 protective order by the party offering this Geomap</p> <p>23 evidence and clear the room?</p> <p>24 MR. WALKER: Your Honor, I don't know</p> <p>25 that it needs to be invoked. I believe it's the order</p>	<p>1 think they're entitled to be in here by the terms of</p> <p>2 the order.</p> <p>3 (The following Pages 1334 through 1337</p> <p>4 are CONFIDENTIAL and have been separately bound.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
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<p>1 adopted by this Court that we must abide by.</p> <p>2 JUDGE EGAN: You're going to be asking</p> <p>3 questions -- those of you who were excused yesterday</p> <p>4 or -- are there any -- you'll need to clear the room.</p> <p>5 A protective order regarding certain documents has</p> <p>6 already been issued, so only the parties may consider</p> <p>7 those. So if you're not -- or hear information about</p> <p>8 this. So if you're not a party, you'll need to be</p> <p>9 excused. Is everybody else that's here -- was there</p> <p>10 only one person?</p> <p>11 Could the attorneys take a look around</p> <p>12 and see if there's anyone else that may need to be</p> <p>13 excused?</p> <p>14 MR. RILEY: Everyone that I see that I</p> <p>15 recognize is a party to the case and covered under the</p> <p>16 protective order, at least from -- folks I'm working</p> <p>17 with.</p> <p>18 JUDGE EGAN: Then, Mr. Walker, do you</p> <p>19 have any concerns anybody is in here that would</p> <p>20 violate your protective order that's been issued for</p> <p>21 your -- on your behalf or your client's behalf?</p> <p>22 MR. WALKER: I don't know everyone, Your</p> <p>23 Honor, but I'm assuming that if they're here it's</p> <p>24 because they're a party or they are associated with</p> <p>25 the party as an employee or agent. Beyond that I</p>	<p>1 Q (By Mr. Riley) Let's move on to Item No. 10.</p> <p>2 Again, I think you were present during the testimony</p> <p>3 of Dr. Collier when he explained that he thought that</p> <p>4 as time has progressed that tools available to</p> <p>5 geologists have also progressed and that more recent</p> <p>6 information is, I guess, more accurate as a result of</p> <p>7 improved technology. Were you here for that</p> <p>8 discussion?</p> <p>9 A I believe that was his testimony.</p> <p>10 Q And as it pertains to the upper Cockfield or</p> <p>11 any mapping done by Exxon in the upper Cockfield is</p> <p>12 the 1996 Exxon application the most recent information</p> <p>13 for the upper Cockfield?</p> <p>14 A As far as I know that's the most recent</p> <p>15 public information supplied by Exxon.</p> <p>16 Q And it seems as though -- that's also the</p> <p>17 most recent in -- at least in Dr. Collier's submitted</p> <p>18 materials or things that he relied on, 1996 is the</p> <p>19 most recent as well, correct?</p> <p>20 A Except for the Exxon 2002, which was much</p> <p>21 higher --</p> <p>22 Q I'm sorry, I left out "in the upper</p> <p>23 Cockfield" in that question.</p> <p>24 A Correct.</p> <p>25 Q Now, with respect then to the upper Cockfield</p>

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TUESDAY, DECEMBER 18, 2007
VOLUME 5

HEARING ON THE MERITS

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<p style="text-align: right;">Page 1339</p> <p>1 and the Exxon information, is the area of review 2 mapped in the 1996 Exxon application? 3 A Yes. 4 Q And am I correct, Doctor, that the light blue 5 lines that are from the 1972 Exxon application are not 6 found in the 1996 Exxon application? 7 A A great many of them are not, especially 8 those north of the -- what's been referred to as the 9 4400-foot fault marked as No. 1 -- no, marked as No. 10 30. 11 Q So even the 1996 more recent data would not 12 indicate that the light blue lines drawn north and 13 west of the 4400-foot fault as we've been calling 14 it -- that those don't appear in the 1996 Exxon 15 materials. Is that correct? 16 A That is correct. 17 Q Again, the -- there are two lines -- I'm 18 sorry, there are three lines that are depicted on 19 Exhibit 1P that derive from the 1996 information? 20 A Correct, shown in pink. 21 Q Right. And those would be lines labeled -- 22 or segments labeled 10, 11 and 12, correct? 23 A Correct. 24 Q With respect to 10, did you identify offset 25 based on the Exxon materials?</p>	<p style="text-align: right;">Page 1341</p> <p>1 A No, they've been on -- on Exhibit 1P they've 2 been shifted slightly to the west. 3 Q I think I left off with Item No. 12 showing, 4 as best you can interpret the Exxon data, a 10-foot 5 offset? 6 A Correct. 7 Q Would you interpret that as a fault? 8 A No. 9 Q The next set of lines drawn on Exhibit 1P 10 which we've labeled as a color robin's egg -- I don't 11 know how that started; light blue seems it would have 12 done but we're going to continue with robin's egg. 13 The robin's egg color, as I just said, are identified 14 lines, I suppose, on the Humble application in 1972, 15 correct? 16 A That is correct. 17 Q And did you do a similar review of the lines 18 drawn on Exhibit 1P in comparison to the 1972 19 information? 20 A I did. 21 Q Let's talk in order, then, beginning with 22 robin's egg labeled Segment 13. I guess the first 23 question I have for you, Doctor, this is an attempt -- 24 or it does map a horizon for Exxon's purposes in that 25 application in the upper Cockfield sand, correct?</p>
<p style="text-align: right;">Page 1340</p> <p>1 A According to the Exxon map there was no 2 offset. 3 Q In your opinion, Doctor, would Line No. 10 or 4 Segment No. 10 constitute a fault? 5 A No. 6 Q Let's talk about Line No. 11. Is there any 7 indication of offset in the Exxon materials for Line 8 No. 11? 9 A I couldn't find any. 10 Q And in your opinion does the Exxon material 11 from 1996 support even a suspicion of a fault where 12 item -- or Segment 11 is identified? 13 A No. 14 Q I think the next one is -- next line is Line 15 No. 12, correct? 16 A Yes. 17 Q And is there -- were you able to review the 18 Exxon materials and identify an offset associated with 19 Line No. 12? 20 A Exxon interpreted an offset of 10 feet. 21 Q I'm sorry, I skipped on No. 11. It appears 22 that No. 11 and No. 12 you made a similar notation as 23 to the location on Exhibit 1P. And is it your opinion 24 that those segments are properly identified in the 25 location identified by Exxon on Exhibit 1P?</p>	<p style="text-align: right;">Page 1342</p> <p>1 A There are six maps that are included in their 2 application dated 1972, and all six of them are within 3 the upper Cockfield sands. 4 Q Are they at different horizons within the 5 upper Cockfield? 6 A Yes. 7 Q Do any of them extend down into the lower 8 Cockfield? 9 A There are none that extend even into the 10 middle, so certainly not into the lower. 11 Q Tell me your observations regarding Segment 12 13? 13 A This seems to be correctly located. On the 14 map Exhibit 8, which is the shallowest of the 15 Cockfield maps, it's shown with an offset of less than 16 25 feet. As you go down approximately 50 feet to the 17 Humble Exhibit 9, the interpreted offset is 18 approximately 40 feet. As you go down another 19 approximately 50 feet to Exhibit 10, the offset is -- 20 the interpreted offset is 50 feet. 21 As you get to Exhibit 11, a little bit 22 farther down into the upper Cockfield, the offset is 23 less than 10 feet. And in the Exhibit 12 there is no 24 fault shown on that map, even though there is 25 control -- there is well control in the area and no</p>

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<p style="text-align: right;">Page 1343</p> <p>1 fault is shown.</p> <p>2 Q Doctor, let's go over what well control is</p> <p>3 just so your statement is clear. What is well control</p> <p>4 in the context of identifying faults?</p> <p>5 A Within the Conroe field, Exxon and most other</p> <p>6 people looking at this field will be mapping mainly</p> <p>7 from well control, which means the tops of, say, the</p> <p>8 1B sand in these various wells. And they'll be</p> <p>9 looking at just what the structure is, what the</p> <p>10 elevation of the top of the 1B sand is in these</p> <p>11 various wells, and also looking to see whether or not</p> <p>12 each of these wells show -- or any of these wells</p> <p>13 shows a cut, a fault cut, within, say, the 1B sand.</p> <p>14 Q And, Doctor, I'm not a geologist and I've</p> <p>15 never done the type of work that you're describing,</p> <p>16 but it seems as though there's a lot of interpretation</p> <p>17 involved in finding a particular sand in a wellbore</p> <p>18 some 5,000 feet deep and then comparing that location</p> <p>19 of sand in another wellbore within the same general</p> <p>20 location and determining -- because there's a</p> <p>21 difference of some 40 or 50 feet even -- that that</p> <p>22 constitutes or indicates a fault in that sand. Is</p> <p>23 that a fair statement?</p> <p>24 A It requires interpretation, yes.</p> <p>25 Q And Dr. Collier, I believe, when I was asking</p>	<p style="text-align: right;">Page 1345</p> <p>1 consistent amount of throw through that -- through</p> <p>2 that area.</p> <p>3 Q So again, based on your evaluation of the</p> <p>4 Humble -- I'm sorry, I keep calling it Exxon, but this</p> <p>5 is Humble at the time in 1972. Is it your opinion</p> <p>6 that Segment 13 identifies or is a fault in the area?</p> <p>7 A No.</p> <p>8 Q Okay. Is there anything about Segment 14 and</p> <p>9 the Exxon back-up material that you reviewed that</p> <p>10 would lead you to a different conclusion? In other</p> <p>11 words, is Segment 14 a fault in your opinion?</p> <p>12 A No.</p> <p>13 Q Was there data available for Segment 14 in</p> <p>14 the lower part of the upper Cockfield?</p> <p>15 A There was well control on the Exhibit 11, and</p> <p>16 it shows no fault at Line 14. Below Exhibit 11 there</p> <p>17 was no well control.</p> <p>18 Q I think we certainly covered Segment 14A with</p> <p>19 Dr. Collier and he withdrew his -- that segment I</p> <p>20 think live here in the hearing -- that he</p> <p>21 misinterpreted a contour line as a fault. Do you</p> <p>22 remember that testimony.</p> <p>23 A I do.</p> <p>24 Q Let's move to 14B then. Again, same series</p> <p>25 of questions regarding 14B. Is it your opinion that</p>
<p style="text-align: right;">Page 1344</p> <p>1 him questions about these faults or his identification</p> <p>2 of these faults indicated that there was no data for</p> <p>3 Humble Exhibit 12 in the lower part of the upper</p> <p>4 Cockfield. Is that your understanding of the Exxon</p> <p>5 materials?</p> <p>6 A There is reduced coverage in the -- in</p> <p>7 Exhibit 12. But in the case of Fault No. -- or Line</p> <p>8 No. 13 there is coverage.</p> <p>9 Q So there would be data available, and that</p> <p>10 data that is available indicates no fault, even at the</p> <p>11 bottom of the upper Cockfield, correct?</p> <p>12 A Correct.</p> <p>13 Q Also is it consistent with the evaluation of</p> <p>14 a fault that the -- it seems to shrink and then grow</p> <p>15 and shrink and then grow based on the Exxon</p> <p>16 interpretation of the various exhibits. Is that</p> <p>17 consistent with your understanding of what you'd find</p> <p>18 in a true fault?</p> <p>19 A In a true fault, you would want the -- it</p> <p>20 depends upon the amount of movement that you're</p> <p>21 hypothesizing for the fault, and it depends upon what</p> <p>22 kind of control you have. But what you want to see is</p> <p>23 consistency throughout the interval that you are</p> <p>24 mapping. So that to be especially confident in the</p> <p>25 interpretation of a fault, you would like to see a</p>	<p style="text-align: right;">Page 1346</p> <p>1 14B in the segment drawn on Exhibit 1B by Dr. Collier</p> <p>2 constitutes or indicates a fault?</p> <p>3 A No.</p> <p>4 Q And could you explain further?</p> <p>5 A The same -- the same reasoning, inconsistent</p> <p>6 throw, no fault cuts within wells, and the fact that</p> <p>7 Exhibit 12 that has adequate well control shows no</p> <p>8 fault being present.</p> <p>9 Q And, Doctor, I hope I didn't neglect to ask</p> <p>10 you, you reviewed the 1972 information in both the</p> <p>11 preparation of the application and in preparation of</p> <p>12 your testimony both previously and here today,</p> <p>13 correct?</p> <p>14 A I did.</p> <p>15 Q If I went down through each of these segments</p> <p>16 beginning with item -- I think I left off at 14B --</p> <p>17 Item 15 through 24 -- well, actually, let's do 15</p> <p>18 through 19.</p> <p>19 The notations in the columns under the</p> <p>20 various headings, your opinion as to your</p> <p>21 observation -- I'm sorry, are they consistent with</p> <p>22 your observations of the Exxon source materials?</p> <p>23 A Yes, sir.</p> <p>24 Q And do Items 15 through 19 in your opinion,</p> <p>25 Doctor, constitute faults in the area of review?</p>

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<p style="text-align: right;">Page 1347</p> <p>1 A No.</p> <p>2 Q Could you explain your reasoning on 15</p> <p>3 through 19, and please highlight any specific</p> <p>4 differences between -- or among those wells -- excuse</p> <p>5 me, those segments?</p> <p>6 A The similar -- similar criteria that I've</p> <p>7 been referring to before, the minor or inconsistent</p> <p>8 offset, the fact that the faults are not consistently</p> <p>9 interpreted with depth, and the fact that none of</p> <p>10 these are cut by wells.</p> <p>11 Q Let's pick up again then with Item No. 20. I</p> <p>12 think this pretty well speaks for itself as to your</p> <p>13 notation under the heading of "Offset." But is it</p> <p>14 your testimony, Doctor, that you do not find any line</p> <p>15 on the Exxon 1972 materials that would correspond even</p> <p>16 with a reasonable interpretation for translation into</p> <p>17 Exhibit 1P. Am I understanding correctly?</p> <p>18 A Correct.</p> <p>19 Q And that's what we -- at least in the</p> <p>20 spreadsheet -- have referred to as fictional, not on</p> <p>21 the map at all. It's not found at all in the 1972</p> <p>22 materials?</p> <p>23 A Correct.</p> <p>24 Q Am I understanding the notation below that</p> <p>25 for Item 21 or Segment 21 that you could find</p>	<p style="text-align: right;">Page 1349</p> <p>1 A I'm not quite sure -- the work was done by --</p> <p>2 for Tidewater Oil Company. I am not sure why it was</p> <p>3 done.</p> <p>4 Q All right. Were the segments identified in</p> <p>5 the Don Carlos 1953 study also found in the 1996 Exxon</p> <p>6 materials?</p> <p>7 A There is some -- excuse me -- some similarity</p> <p>8 but some discontinuity.</p> <p>9 Q All right. The -- again, let's look at Item</p> <p>10 25 then, the dark blue segment identified in Exhibit</p> <p>11 74 as Segment 25?</p> <p>12 A Yes.</p> <p>13 Q Could you help me locate that since you --</p> <p>14 A Over there towards the -- towards the east</p> <p>15 side, just below the -- actually in between the two</p> <p>16 red faults.</p> <p>17 Q Running north-south more or less?</p> <p>18 A Running north-south.</p> <p>19 Q With a segment kicking off to the west?</p> <p>20 A Yes.</p> <p>21 Q And did you review the source materials for</p> <p>22 that segment?</p> <p>23 A I did.</p> <p>24 Q Did you determine, based on those source</p> <p>25 materials, an offset associated with that fault?</p>
<p style="text-align: right;">Page 1348</p> <p>1 something that might have been that segment in the</p> <p>2 Exxon materials, but it appeared to be mislocated?</p> <p>3 A I might have.</p> <p>4 Q But that would be a matter of interpreting</p> <p>5 the Exxon materials differently from the way Dr.</p> <p>6 Collier did in Exhibit 1P, and for our purposes all</p> <p>7 you did was indicate that it's mislocated and not on</p> <p>8 the Exxon materials?</p> <p>9 A Correct.</p> <p>10 Q And that would be true as we go down through</p> <p>11 to Item 24, those same notations are made in the</p> <p>12 offset column and would your answers be the same if I</p> <p>13 asked you the same questions as to each of those</p> <p>14 segments on Exhibits 1P?</p> <p>15 A Correct.</p> <p>16 Q Let's look at Item 25. This is referring to</p> <p>17 a dark blue line that I believe the source material</p> <p>18 for that dark blue line is a 1953 study. Is that the</p> <p>19 way to refer to it?</p> <p>20 A That's correct.</p> <p>21 Q And I think it was -- it's referred to in the</p> <p>22 spreadsheet as Don Carlos.</p> <p>23 A He was the author, yes.</p> <p>24 Q What was Don Carlos up to at the time, if you</p> <p>25 know, for the 1953 source information.</p>	<p style="text-align: right;">Page 1350</p> <p>1 A Approximately 50 feet.</p> <p>2 Q Now, I see in the -- in the notation -- I</p> <p>3 think -- I'm sorry, the column heading is "Depth,"</p> <p>4 that it appears that Don Carlos was mapping faults in</p> <p>5 the Jackson shale. Is that correct?</p> <p>6 A It's difficult to interpret just where the --</p> <p>7 he was -- he was mapping a -- what he called a</p> <p>8 radioactive horizon, which usually means a blip on a</p> <p>9 curve on the geophysical wireline logs and just where</p> <p>10 that was. If he's talking about 150 feet above the</p> <p>11 main pay, main Cockfield pay, then he's still in the</p> <p>12 upper Cockfield.</p> <p>13 If he's talking about the top of the</p> <p>14 Cockfield formation, top of the Yegua, then he's</p> <p>15 talking about a marker that's just barely into the</p> <p>16 Jackson.</p> <p>17 Q You used a term that I hadn't heard used in</p> <p>18 the hearing previously, top of the pay. Could you</p> <p>19 explain what that means?</p> <p>20 A Top of the oil productive section .</p> <p>21 Q I suspected that's what it was. Was there a</p> <p>22 throw or offset associated based on the Don Carlos</p> <p>23 materials with Segment 25?</p> <p>24 A Fifty feet.</p> <p>25 Q Is it your opinion, Doctor, that Segment 25,</p>

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<p style="text-align: right;">Page 1351</p> <p>1 as identified by Don Carlos, indicates a fault in the 2 area of review? 3 A No. 4 Q And what is your reasoning? 5 A Same reasoning, not cut by a fault -- I'm 6 sorry, not cut by a well to locate it correctly and 7 the amount of offset is minimal. 8 Q All right. But I assume your answer -- well, 9 let me explore -- the location of Segment 26 on the 10 Collier map, the notation you have in -- I think in 11 the relevant column -- is partially "section on 12 eastern side of AOR fictional." Could you explain 13 that location? 14 A I'm trying to locate Line 26. 15 Q It is a long sweeping curve beginning to 16 the -- 17 A Oh, yes, yes. There it is. So from the -- 18 from the eastern approximately third of that line 19 is -- is not present on the Don Carlos map. 20 Q And that's highlighted on Exhibit 74? 21 A Yes, yes. 22 Q So that portion of Exhibit 1P as drawn by 23 Dr. Collier, you don't find any evidence of that even 24 in the source document developed by Don Carlos in 953? 25 A Correct.</p>	<p style="text-align: right;">Page 1353</p> <p>1 depicted based on the Don Carlos map on Exhibit 1P? 2 A I think it's been mislocated. It should have 3 more of a direction towards the -- towards the 4 southwest. That's how it's shown on the Don Carlos 5 source map. 6 Q Is that to say that the curve on the -- I 7 guess the western side -- 8 A Right. 9 Q -- is not indicated on the Don Carlos map? 10 A Correct. 11 Q So the shape is at least off from what Don 12 Carlos drew in 1953? 13 A Yes, sir. 14 Q Again, the throw indicated -- or I'm sorry, 15 we use the word offset in the column -- offset 16 indicated by Don Carlos in 1953? 17 A 10 to 20 feet. 18 Q Was that again using this radioactive 19 marker -- 20 A Yes. 21 Q -- methodology? 22 A Yes. 23 Q Would you think that radioactive marker 24 methodology is accurate to determine a fault of 10 to 25 20 feet difference?</p>
<p style="text-align: right;">Page 1352</p> <p>1 Q The remainder of that segment I think we've 2 identified as 26. Could you describe your 3 observations regarding that particular segment? 4 A In -- the throw is -- is interpreted to be 5 50 feet, and I don't believe it's there. It's an 6 interpretational fault. 7 JUDGE WALSTON: Could I ask a quick 8 clarifying question? 9 MR. RILEY: Of course. 10 JUDGE EGAN: I thought you said part of 11 this Line 26 was highlighted, but it's not highlighted 12 on mine. 13 MR. RILEY: I think if you follow it all 14 the way to the other side, Judge, it is a long line 15 and it sweeps across and then takes a little jog to 16 the southeast and then continues on up. And it's 17 only -- 18 JUDGE WALSTON: -- that jog was another 19 one. 20 MR. RILEY: Yeah, only that portion 21 that's well to the east -- eastern side. 22 Q (By Mr. Riley) Am I correct, Dr. Langhus? 23 A That is correct. 24 Q I lost my place -- okay. Item 27 or Segment 25 27? Again let's start with whether it is accurately</p>	<p style="text-align: right;">Page 1354</p> <p>1 A No. 2 Q Segment 28 is a -- it's to the right-hand 3 side of the document near the highlighted section of 4 Segment 26. Do you find that? 5 A Yes. 6 Q Is it -- at least were you able to find that 7 on the Don Carlos map? 8 A Yes. 9 Q Same methodology used by Don Carlos in that 10 instance regarding Segment 28? 11 A Correct. 12 Q And the -- what are your observations 13 regarding -- I'm sorry, what is the offset indicated 14 by the Don Carlos source material? 15 A 50 feet as interpreted on the Carlos map. 16 Q Okay. And is it your opinion, Doctor, that 17 50 feet, using a radioactive marker, as opposed to a 18 well that cuts that line or cuts that fault, is an 19 accurate way to identify and depict a fault in the 20 area of review? 21 A No, because there are no wells that do cut 22 this fault. If there had been a well or wells cutting 23 this fault, then it would be a credible mapping tool. 24 Q Do you rely exclusively on the summaries of 25 the information contained in these source documents or</p>

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<p style="text-align: right;">Page 1355</p> <p>1 sources that we've been discussing?</p> <p>2 A I'm sorry, the summaries?</p> <p>3 Q Yes, the summaries, the reports themselves.</p> <p>4 Or did you look further into the back-up data or</p> <p>5 information available in the Railroad Commission</p> <p>6 files?</p> <p>7 A I have not looked at the -- the back-up</p> <p>8 material would be well logs, geophysical well logs.</p> <p>9 And I have not -- I have looked at some of those for</p> <p>10 the application, but not by any means all of the</p> <p>11 geophysical logs.</p> <p>12 Q All right. Let's talk about Item 29 or</p> <p>13 Segment 29. Segment 29 appears to actually coincide</p> <p>14 with one of the faults that you identified as in the</p> <p>15 area of review. Is that correct?</p> <p>16 A That's correct.</p> <p>17 Q And is it indicated or is the offset</p> <p>18 indicated in the Don Carlos materials?</p> <p>19 A Yes. It appears to be approximately</p> <p>20 400 feet.</p> <p>21 Q Is that consistent with your interpretation</p> <p>22 of information in the application?</p> <p>23 A Yes. Yes. The fault labeled as 31, which is</p> <p>24 the southerly red fault at the edge of the AOR has a</p> <p>25 very high -- a very large amount of offset, 2 to</p>	<p style="text-align: right;">Page 1357</p> <p>1 you think 30 and 31 are the only two actual faults</p> <p>2 that can be -- or that should be considered in this</p> <p>3 application?</p> <p>4 A There are three primary criteria that I'm</p> <p>5 going on. These are the only faults that are shown on</p> <p>6 all of the public deep maps. No. 2, these are the</p> <p>7 only faults that cut through -- that cut through the</p> <p>8 upper Cockfield member. They are the only faults with</p> <p>9 offsets over 60 feet -- interpreted offsets over 60</p> <p>10 feet -- and they are the only faults that have well</p> <p>11 cuts?</p> <p>12 Q And with all that you've heard and all that</p> <p>13 you've reviewed in this case, all that you heard in</p> <p>14 testimony and all that you've reviewed in preparation</p> <p>15 for this testimony, is it still your opinion that you</p> <p>16 have accurately identified the faults that are</p> <p>17 responsive to the TCEQ requirements in the UIC</p> <p>18 program?</p> <p>19 A Yes.</p> <p>20 Q Those would be faults 30 and 31, correct?</p> <p>21 A Correct.</p> <p>22 Q 30 and -- yes.</p> <p>23 A Yes, 30 and 31.</p> <p>24 Q Doctor, switching gears just a bit on</p> <p>25 subjects, were you here yesterday when Mr. Grant</p>
<p style="text-align: right;">Page 1356</p> <p>1 400 feet in places.</p> <p>2 Q That is significantly more than many of the</p> <p>3 other offsets that at least Dr. Collier -- I'm sorry,</p> <p>4 that you've identified as we've gone through the</p> <p>5 various segments, correct?</p> <p>6 A Correct.</p> <p>7 Q Do you know if that segment was cut by a well</p> <p>8 to use, I think, your terminology?</p> <p>9 A Along the -- along the length of it it has</p> <p>10 been. Whether or not Segment 29 has been cut by a</p> <p>11 well, I don't know.</p> <p>12 Q Okay. Now, finally, we come to Segments 30</p> <p>13 and 31, which are the faults that you identified as</p> <p>14 part of your work on the TexCom application that you</p> <p>15 think are the two faults in the area of review is that</p> <p>16 correct?</p> <p>17 A Correct.</p> <p>18 Q And by the way, before we go on there, all of</p> <p>19 what we've been discussing since we left the</p> <p>20 orange-colored lines on Exhibit 1P have been various</p> <p>21 attempts to map in the upper Cockfield. Is that</p> <p>22 correct?</p> <p>23 A That is correct.</p> <p>24 Q Explain, if you would -- there aren't notes</p> <p>25 in the right-hand column. Explain, if you would, why</p>	<p style="text-align: right;">Page 1358</p> <p>1 testified that there is a way to determine whether</p> <p>2 there is a nontransmissive and transmissive -- or</p> <p>3 transmissive fault 4000 feet to the southeast of the</p> <p>4 wellbore that we've been referring to as WDW-315 or</p> <p>5 410, depending on when we're talking about it?</p> <p>6 A Yes.</p> <p>7 Q And that's through a Fall-off test after the</p> <p>8 well has been reperforated and the area of</p> <p>9 investigation -- radius of investigation could go out</p> <p>10 farther than 4400 feet.</p> <p>11 A Yes.</p> <p>12 Q That your understanding?</p> <p>13 A Yes, sir.</p> <p>14 Q And would you agree with Mr. Grant that the</p> <p>15 answer, so to speak, as to whether the fault is</p> <p>16 transmissive or not could be gained by that type of</p> <p>17 testing?</p> <p>18 A It could be.</p> <p>19 Q And is it your understanding, based on what</p> <p>20 you've heard, that the TCEQ would require -- or could</p> <p>21 require a Fall-off test with that far a radius of</p> <p>22 investigation?</p> <p>23 A They could require that.</p> <p>24 Q Let's talk about the transmissivity of that</p> <p>25 fault. And let's be clear, first, whether you believe</p>

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<p style="text-align: right;">Page 1359</p> <p>1 that that fault is transmissive vertically from the 2 upper Cockfield -- or, sorry, let's not limit it to 3 the upper Cockfield -- from the Cockfield up through 4 the Jackson shale into the USDW. Do you have an 5 opinion as to whether that fault is vertically 6 transmissive as I just described it? 7 A I do not think that it is transmissive 8 through the Jackson shale. 9 Q Okay. Within the various layers of the upper 10 Cockfield, do you have an opinion as to whether it is 11 vertically transmissive in those layers? 12 A I think it is through the upper Cockfield. 13 Q Okay. Could you explain why you think that 14 it could be vertically transmissive within the 15 Cockfield but not vertically transmissive through the 16 Jackson shale? 17 A Through the Jackson shale, if it were 18 transmissive through the Jackson shale, there would 19 not have been 700 million barrels of oil and an 20 attendant huge amount of gas produced from this 21 structure. It is the integrity of the Jackson shale 22 that holds in the -- these hydrocarbons -- or has. 23 So empirically speaking that would be 24 the number one defense of the integrity of the Jackson 25 shale, the other being that this eocene marine shale</p>	<p style="text-align: right;">Page 1361</p> <p>1 Conroe field? What did you rely on? 2 A I relied on Humble Exxon documentation, for 3 instance, on the -- their exhibits with the 1972 4 application to the Railroad Commission. The original 5 oil-water contact is marked on these maps. 6 Q And it that at a depth that you just 7 described as 49 something? I couldn't -- 8 A Minus 4990. That's the elevation. 9 Q And is that from sea level? 10 A That's correct. 11 Q All right. So if I understand correctly, 12 there was data in the materials that you reviewed for 13 this application and prior to your testimony that gave 14 conditions of a reservoir on both sides of the 15 4400-foot fault -- I'm sorry, the fault that we've 16 been calling the 4400-foot fault. 17 A Correct. 18 Q And based on your review of that information, 19 the oil-water contact on both sides was at the same 20 depth. Am I understanding correctly? 21 A That is correct. 22 Q And is it your testimony then that that is 23 indicative of a transmissive nature of the fault in 24 the upper Cockfield? 25 A Yes, it is. It's not 100 percent proof; it's</p>
<p style="text-align: right;">Page 1360</p> <p>1 has very little strength to it. You've heard several 2 people refer to it as playdough or similar and I think 3 that's correct. And the ability for rocks of these 4 constituents -- or of this consistency to maintain an 5 open vertical fault would be zero. 6 The fact that I do think that this fault 7 has some sort of transmissibility within the upper 8 Cockfield is evidenced by the original oil-water 9 contact, at least in the northern part of the Conroe 10 field where the productive upper -- upper Cockfield 11 sands on both sides of the fault have a common water 12 level of minus 4990. If the fault were totally 13 sealing, the chances of these two accumulations having 14 the same water level would be highly unlikely. 15 Q Let's talk about that a little further. The 16 term I think I used or tried to use with Mr. Grant 17 yesterday, I believe, was the virgin reservoir. Is 18 that a term you're familiar with? 19 A Virgin reservoir conditions, yes. 20 Q So the virgin reservoir conditions, as I 21 understand it, are defined as the conditions when the 22 reservoir was discovered. Is that fair so far? 23 A Correct. 24 Q How are you able, in 2007, to the figure out 25 what the conditions were in its virgin state in the</p>	<p style="text-align: right;">Page 1362</p> <p>1 not bullet proof, but it certainly is a strong 2 indication. 3 Q Could you explain a little bit further why 4 that's a strong indication? Could it just be 5 happenstance that the two oil-water contacts are at 6 the same depth? 7 A It could be -- it's -- the oil-water contact 8 has to be something on both sides of the fault and 9 just by luck it could be the same. However, this 10 doesn't usually happen with the accuracy of a foot or 11 two. The fact that they are identical is a strong 12 argument to show that they were in communication. 13 Q What I'm imagining, Doctor, is the reservoir 14 being identified, let's say, in the upper Cockfield 15 based on the diagram that we've previously introduced 16 as TexCom Exhibit 72 -- I think you have that out in 17 front of you -- 18 A Yes. 19 Q But first let's start with -- if I -- if we 20 could, actually, take a cross section of the 21 subsurface as attempted to be depicted in Exhibit 22 72 -- would it be -- would the lines be horizontal? In 23 other words horizontal to the horizon? 24 A No, no, the -- the stratigraphic boundaries, 25 say, between the Jackson shale and the upper Cockfield</p>

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<p style="text-align: right;">Page 1363</p> <p>1 would be -- would be slightly rising to the right 2 side. That's the culmination of the dome is off the 3 right-hand side off of the cross section. 4 Q So if I tip this just a little bit, then that 5 would be a more accurate depiction of how the actual 6 strata are sloped? 7 A Correct. 8 Q And do you remember the discussion I had with 9 Mr. Grant yesterday about an attic? 10 A Yes. 11 Q Could you explain what an attic is, if you 12 know? 13 A An attic is a geometrical feature that -- in 14 this case we're talking about a trap within the -- 15 within the upper Cockfield that has trapped 16 hydrocarbons, and the attic being a two-sided feature 17 with the regional -- or not regional but local dip on 18 one side. 19 So on this cross section on the 20 left-hand side of the trap would be local dip to the 21 left, and the other portion of the trap -- of the 22 geometrical trap would be the fault. So we have the 23 upper Cockfield sand on the left-hand side would be 24 trapped stratigraphically by the Jackson shale. And 25 on the -- on the right-hand side it would be trapped</p>	<p style="text-align: right;">Page 1365</p> <p>1 contact. I'm just imagining those layers shifting as 2 depicted on this diagram. If they're 30 to 40 feet 3 thick and you shift them a hundred feet, they're no 4 longer in contact. Is that correct? 5 A Correct. 6 Q What would be in contact, if anything, then 7 along the fault plane in the Cockfield formation? 8 A In the middle and lower you would have sands 9 on one side being in contact with either thin sands or 10 thin shales or both. 11 Q Would you expect at least that those thin -- 12 those sand contacts, the contact -- contacts that are 13 depicted in Exhibit 72 -- could be transmissive as 14 between the lower Cockfield and the middle Cockfield, 15 the middle Cockfield and upper Cockfield? 16 A Yes. 17 JUDGE EGAN: Mr. Riley, about how much 18 longer do you have? 19 MR. RILEY: I'm just about done. Two or 20 three minutes. 21 JUDGE EGAN: Okay. That's fine. I was 22 just going to take an afternoon break. 23 MR. RILEY: Okay. Yeah, I think I'll be 24 done and then maybe that would be -- 25 JUDGE EGAN: Okay.</p>
<p style="text-align: right;">Page 1364</p> <p>1 by faulted Jackson shale. 2 Q So the -- and we're looking at the little 3 contact or corner -- I don't know if you can see all 4 the way down there -- but if I tilt the diagram a 5 little bit, I can imagine at least a roof top and an 6 attic -- 7 A Right. 8 Q -- in that area. Would you expect that attic 9 to form at lower strata as -- for instance, the middle 10 Cockfield and the lower Cockfield? 11 A Certainly. If there was similar geometry -- 12 if there was a sufficient shale to trap at the -- oh, 13 I'm sorry. In the middle Cockfield, no; or lower 14 Cockfield, no, there has not been hydrocarbon trapped 15 in that geometry. 16 Q Just as a refresher, the thickness of the 17 Jackson shale in the area of the TexCom application is 18 how thick? 19 A A thousand 88 feet. 20 Q And the thickness of the shale layers 21 separating the upper, middle and lower Cockfield, how 22 thick are they? 23 A 30 to 40. 24 Q And if the offset was the same through the 25 fault plain, the shale layers would no longer be in</p>	<p style="text-align: right;">Page 1366</p> <p>1 JUDGE WALSTON: I just want to ask a 2 clarifying question -- 3 MR. RILEY: Of course. 4 JUDGE WALSTON: -- and I think you 5 clarified it just then. When you've been talking 6 about the fault being transmissive in the upper 7 Cockfield, does that mean it's transmissive also 8 between the lower Cockfield to the middle and then 9 from the middle to the upper? 10 WITNESS LANGHUS: I would think so. 11 JUDGE WALSTON: Is that your opinion? 12 WITNESS LANGHUS: Yes. 13 JUDGE WALSTON: Okay. 14 WITNESS LANGHUS: Of course, for that I 15 have no evidence, but -- 16 Q (By Mr. Riley) And that goes back to some of 17 what we talked about, that a Fall-off test would at 18 least show whether it's a boundary? 19 A Yes. 20 Q And Mr. Grant suggested that the fault is not 21 transmissive and is a boundary, and that was his 22 interpretation based upon what he believed the 23 layers -- the shale content and layers to be and what 24 phenomena would occur as those layers shifted, mainly 25 smearing, correct?</p>

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<p style="text-align: right;">Page 1367</p> <p>1 A Correct.</p> <p>2 Q Is it equally likely in your opinion that</p> <p>3 there isn't sufficient shales in those layers for the</p> <p>4 smearing to prevent transmission between the lower</p> <p>5 Cockfield and the middle Cockfield and the middle</p> <p>6 Cockfield and the upper Cockfield?</p> <p>7 A It's my opinion that that's quite likely.</p> <p>8 Q All of these opinions, though, could be borne</p> <p>9 one way or the other by a Fall-off test after the well</p> <p>10 is reperforated in a radius of investigation that</p> <p>11 exceeds the distance of the fault?</p> <p>12 A Correct.</p> <p>13 MR. RILEY: If I could just have one</p> <p>14 second --</p> <p>15 JUDGE WALSTON: All right. While you do</p> <p>16 that, I'm going to reask my question because I may</p> <p>17 have confused myself.</p> <p>18 MR. RILEY: Okay.</p> <p>19 JUDGE WALSTON: Just tell me what you</p> <p>20 mean by when you say it's transmissive in the upper</p> <p>21 Cockfield. That's what you kept referring to. You're</p> <p>22 talking about a horizontal transmissiveness?</p> <p>23 WITNESS LANGHUS: Yes, yes.</p> <p>24 JUDGE WALSTON: Okay. That clarifies it</p> <p>25 then.</p>	<p style="text-align: right;">Page 1369</p> <p>1 MR. RILEY: All right. Thank you,</p> <p>2 Dr. Langhus. I have no further questions.</p> <p>3 JUDGE EGAN: All right. We'll take a</p> <p>4 10-minute break, come back at 25 til.</p> <p>5 (Recess: 4:22 p.m. to 4:37 p.m.)</p> <p>6 (TexCom Exhibit No. 76 marked)</p> <p>7 JUDGE EGAN: All right. We've back on</p> <p>8 the record.</p> <p>9 Mr. Riley, have you finished with the</p> <p>10 witness --</p> <p>11 MR. RILEY: I've finished with the</p> <p>12 witness. I have one exhibit that I think is</p> <p>13 self-authenticating and admissible on its face, which</p> <p>14 is an excerpt of the deposition taken of Dr. Collier</p> <p>15 in this matter. It's been labeled TexCom Exhibit 76,</p> <p>16 and I'll put it in the record.</p> <p>17 JUDGE EGAN: You'll what? I'm sorry.</p> <p>18 MR. RILEY: I said I offer it into</p> <p>19 evidence.</p> <p>20 JUDGE EGAN: As?</p> <p>21 MR. RILEY: TexCom Exhibit 76.</p> <p>22 JUDGE EGAN: Any objections to TexCom</p> <p>23 Exhibit No 76?</p> <p>24 It is admitted.</p> <p>25 (TexCom Exhibit No. 76 admitted)</p>
<p style="text-align: right;">Page 1368</p> <p>1 MR. RILEY: Well, it gets a little</p> <p>2 confusing. And I'm sorry, Judge, let me try to</p> <p>3 clarify and maybe make it more confusing.</p> <p>4 Q (By Mr. Riley) In a sense it would be</p> <p>5 horizontal because the sands are now in contact,</p> <p>6 correct?</p> <p>7 A Correct. If there were sands in contact with</p> <p>8 sands across the fault, there would be some -- there</p> <p>9 would be some transmissivity. If such as on the -- on</p> <p>10 the top of the little fault diagram you have sands in</p> <p>11 contact with shale, there would be no transmissivity.</p> <p>12 Q But just because we talk about these things</p> <p>13 in relative terms, I want to be clear that vertically</p> <p>14 transmissive could mean that you could move in that</p> <p>15 sand-to-sand contact in -- from the lower Cockfield</p> <p>16 into the upper Cockfield. It may not actually be</p> <p>17 vertical just because in reality one side is</p> <p>18 down-thrown and one side is up-thrown, correct?</p> <p>19 A Correct.</p> <p>20 Q So vertically though in the sense of it would</p> <p>21 move into a stratum that we have defined as middle?</p> <p>22 A Yes.</p> <p>23 MR. RILEY: Okay. Does that make things</p> <p>24 worse, Judge, or --</p> <p>25 MR. HILL: No, I understand.</p>	<p style="text-align: right;">Page 1370</p> <p>1 JUDGE EGAN: Okay. Lone Star, do you</p> <p>2 have any cross, Mr. Hill?</p> <p>3 MR. HILL: We have no questions for the</p> <p>4 witness, Your Honor.</p> <p>5 JUDGE EGAN: Okay. Mr. Walker or</p> <p>6 Ms. Stewart?</p> <p>7 MR. WALKER: Yes, Your Honor, I have a</p> <p>8 few questions for Dr. Langhus.</p> <p>9 JUDGE EGAN: All right.</p> <p>10 CROSS-EXAMINATION</p> <p>11 BY MR. WALKER:</p> <p>12 Q Dr. Langhus, good evening again.</p> <p>13 A Good afternoon, Counselor.</p> <p>14 Q Would it be fair to say, Dr. Langhus, that</p> <p>15 you disagree with the findings and conclusions and</p> <p>16 opinions of Dr. Collier?</p> <p>17 A Yes, sir.</p> <p>18 Q Let me ask you if -- you know, I could go</p> <p>19 down all 30 items on this map and I think I would be</p> <p>20 stoned by the other individuals in the hearing.</p> <p>21 (Laughter)</p> <p>22 MR. WALKER: I guess that's in the</p> <p>23 record, isn't it, Lou?</p> <p>24 THE REPORTER: Yes, sir. I'm sorry.</p> <p>25 (Laughter)</p>

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<p style="text-align: right;">Page 1371</p> <p>1 A Are you saying stoned because I'm a 2 geologist? 3 Q I did not realize the humor. I'm sorry. 4 But let me ask you if -- I did take 5 notes as Mr. Riley was going down each item. And, for 6 instance, with Item No. 1 on the document that is 7 entitled "Collier's Faults" -- which again has, I 8 guess, a double meaning -- but the "Faults Claimed by 9 Hughbert Collier" do you recognize that document? 10 A Yes, sir. 11 Q I think it is an exhibit and I forget which 12 one it is. 13 A 75. 14 Q 75. Excellent. But on No. 1, I noted that 15 you -- you said "they interpreted as a fault the 16 completion data and water map 1/1/44," but you 17 disagree. 18 A Correct. 19 Q All right. And then No. 2, interpreted by 20 Exxon as a fault, and did you disagree with No. 2? 21 A Yes. 22 Q Then No. 3, Exxon application 2002, was there 23 a reference in there that was purportedly a fault, 24 Item No. 3? 25 A It's either -- it was either the line that</p>	<p style="text-align: right;">Page 1373</p> <p>1 A Yes, sir. 2 Q All right. Moving down to 25, Don Carlos 26, 3 27, 28 and 29, the Don Carlos references, does the 4 source material show those or reference those as 5 faults? 6 A Yes. 7 Q Okay. And then, of course, 30 and 31 you 8 clearly agree that those are referenced faults? 9 A Correct. 10 Q All right. So is it fair to say, 11 Dr. Langhus, that with the exception of 14A, Items 1 12 through 29, the source materials reference faults? 13 MR. RILEY: Objection -- I'm sorry, the 14 reference to the items, Counselor, is my objection. 15 With the notations that the witness couldn't find the 16 source materials -- within the source materials some 17 of those segments, assuming -- I'm trying to 18 understand, since you're doing this in a holistic 19 sense or trying to be comprehensive, whether you mean 20 that Dr. Langhus has actually identified from the 21 source materials the lines drawn by Dr. Collier? 22 MR. WALKER: Well, thank you, 23 Counselor -- 24 MR. RILEY: I'm just trying to explain 25 my objection, Counselor.</p>
<p style="text-align: right;">Page 1372</p> <p>1 was on Exhibit 1P was either mislocated from an Exxon 2 interpreted fault, or else there was no Exxon 3 interpreted fault. I couldn't tell. 4 Q Okay. I guess to try and speed this up, 5 Items 2, 3, 4 and 5 are all from the Exxon application 6 of 2002. 7 A 2, 3, 4 and 5, yes. 8 Q All right. And do those Items 2, 3, 4 and 5 9 purport to show faults -- at least the source 10 material; I'm referring to the source material -- the 11 Exxon application 2002? 12 A Yes. The lines on the Exxon 2002 map are 13 labeled as faults. 14 Q Very good. The Geomap -- oops. Let's say 15 this, Items, 6, 7, 8 and 9, do those items on Exhibit 16 75 -- does the source material show faults? 17 A Yes, they're labeled as faults. 18 Q Very good. 10, 11 and 12, the Exxon 19 application 1996, does the source material label the 20 references as faults? 21 A Yes. 22 Q 13 and 14, that's Humble application 72, and 23 then 14B through 24, all Humble application 72, do 24 those references -- does the source material list 25 those as faults?</p>	<p style="text-align: right;">Page 1374</p> <p>1 MR. WALKER: Thank you. 2 Q (By Mr. Walker) My last question was an 3 attempt to summarize the previous series of questions 4 to the effect that Dr. Langhus has admitted that the 5 source materials -- with the exception of 14A -- the 6 source materials referenced faults. Is that correct? 7 A The -- yeah, whether or not these -- these 8 source -- the interpreted faults on the source 9 material correspond in a one-to-one manner with 10 Dr. Collier's Exhibit 1P I'll have to -- I'll have to 11 say that that's not 100 percent. 12 Q I understand. I understand you do have some 13 disagreement with the correlation and the mapping that 14 Dr. Collier made based on the source materials? 15 A Yes, sir. 16 Q All right. But again, my question was that 17 with Items 1 through 29, excluding 14A, I believe that 18 you had individually agreed that the source materials 19 referenced faults? 20 MR. RILEY: Objection. 21 JUDGE EGAN: I understand his question 22 to be whether or not the source materials are 23 addressing faults. Is that what you're asking? 24 MR. WALKER: Correct. 25 MR. RILEY: But not -- not specifically</p>

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<p style="text-align: right;">Page 1375</p> <p>1 these --</p> <p>2 JUDGE EGAN: Not specifically one-on-one</p> <p>3 with these. You're talking about the source material</p> <p>4 listed in Nos. 1 through 29 minus 14A. Is that</p> <p>5 correct?</p> <p>6 JUDGE WALSTON: I guess the confusion,</p> <p>7 Mr. Walker, let me add this -- and I don't know if</p> <p>8 this is what Mr. Riley is getting at -- because I was</p> <p>9 confused like on Items 8 and 9, you look and it says</p> <p>10 it does not exist on the source. So I'm not sure --</p> <p>11 JUDGE EGAN: If you're talking</p> <p>12 specifically -- his objection is that some of them are</p> <p>13 not found on the source. If you're talking about the</p> <p>14 source strictly, then the objection is overruled.</p> <p>15 MR. WALKER: Thank you, Your Honor. And</p> <p>16 I'll give up my attempt to summarize because I think I</p> <p>17 covered it individually.</p> <p>18 JUDGE EGAN: Okay.</p> <p>19 Q (By Mr. Walker) Would it be fair to say</p> <p>20 that, Dr. Langhus -- and I won't go through them one</p> <p>21 at a time -- but that with respect to the Exxon</p> <p>22 application 2002 you have some disagreement with what</p> <p>23 Exxon found?</p> <p>24 A Yes.</p> <p>25 Q With the references on Exhibit 75, references</p>	<p style="text-align: right;">Page 1377</p> <p>1 Q All right. Based on interpretation of</p> <p>2 information?</p> <p>3 A Correct.</p> <p>4 Q Are you familiar with Rule 331, Dr. Langhus,</p> <p>5 of the Texas Administrative Code entitled "Class I</p> <p>6 Wells"?</p> <p>7 A Yes.</p> <p>8 Q Are you familiar with subparagraph (P) like</p> <p>9 Paul?</p> <p>10 A I believe so.</p> <p>11 Q Let me ask you if you agree with the reading</p> <p>12 that it states, "delineation of all faults within the</p> <p>13 area of review," that's the initial clause of that</p> <p>14 section. Do you agree with the --</p> <p>15 A Yes.</p> <p>16 Q -- with the reading?</p> <p>17 A Yes.</p> <p>18 Q Okay. Would it be fair to say, Dr. Langhus,</p> <p>19 that with respect to Applicant's Exhibit 75 -- and</p> <p>20 again without going down the list -- but that you have</p> <p>21 some disagreement with the findings of Exxon, the</p> <p>22 findings of the information source for Items 6, 7, 8</p> <p>23 and 9, the findings of the Humble application, and the</p> <p>24 findings of Don Carlos? And together with all of</p> <p>25 those you also have some disagreement with the</p>
<p style="text-align: right;">Page 1376</p> <p>1 6, 7, 8 and 9, you have some disagreement?</p> <p>2 A Yes.</p> <p>3 Q References 10, 11 and 12, Exxon application</p> <p>4 '96, you have some disagreement with what Exxon found?</p> <p>5 A Yes.</p> <p>6 Q Humble application 1972 references 13, 14,</p> <p>7 and then 14B through 24. Would it be fair to say you</p> <p>8 have some disagreement with what the Humble</p> <p>9 application findings are?</p> <p>10 A Yes, sir.</p> <p>11 Q And then with the Don Carlos references, 25</p> <p>12 through 29, is it fair to say you have some</p> <p>13 disagreement with what's found in the Don Carlos</p> <p>14 references?</p> <p>15 A Yes, sir.</p> <p>16 Q All right. Dr. Langhus, let me ask you if</p> <p>17 you have a definition of a suspected fault?</p> <p>18 A The way I would define it is a fault that I</p> <p>19 see some evidence for. And what that evidence would</p> <p>20 be would be a case-by-case basis, but it's something</p> <p>21 that I have some evidence for, that I have faith in.</p> <p>22 Q All right. And did you just describe in your</p> <p>23 answer a somewhat subjective analysis with respect to</p> <p>24 determining a suspected fault?</p> <p>25 A Yes. It's subjective to some extent.</p>	<p style="text-align: right;">Page 1378</p> <p>1 findings of Hughbert Collier?</p> <p>2 A I have some disagreements with all of those,</p> <p>3 yes.</p> <p>4 Q In all fairness, Dr. Langhus, does that make</p> <p>5 you right and all of those folks wrong?</p> <p>6 A In my opinion, yes.</p> <p>7 Q In this particular case, Dr. Langhus, would</p> <p>8 you agree with me if we were to, I suppose, somewhat</p> <p>9 figuratively count up the individuals that produced</p> <p>10 the Exxon material, the 6, 7, 8, 9 material, the</p> <p>11 Humble material, the Don Carlos material, and</p> <p>12 Dr. Collier, that it would appear in this case,</p> <p>13 Dr. Langhus, it's you against them?</p> <p>14 A In a -- in a strange way of looking at it,</p> <p>15 yes.</p> <p>16 MR. WALKER: Your Honor, I'll pass the</p> <p>17 witness.</p> <p>18 JUDGE EGAN: Mr. Forsberg?</p> <p>19 MR. FORSBERG: No questions, Your Honor.</p> <p>20 JUDGE EGAN: Ms. Collins?</p> <p>21 MS. COLLINS: No questions.</p> <p>22 MR. WILLIAMS: No questions.</p> <p>23 MR. RILEY: Any redirect, Mr. Riley?</p> <p>24</p> <p>25</p>

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<p style="text-align: right;">Page 1379</p> <p>1 REDIRECT EXAMINATION</p> <p>2 BY MR. RILEY:</p> <p>3 Q While artfully done and exemplary of a trial</p> <p>4 lawyer, isn't it also true, Doctor, that all of those</p> <p>5 sources disagree with each other?</p> <p>6 A Of course. Except -- except -- in the area</p> <p>7 of the -- of the two faults that are shown by all of</p> <p>8 the deep maps.</p> <p>9 Q So Exxon disagrees with itself, correct?</p> <p>10 A Yes.</p> <p>11 Q Humble disagrees with Exxon?</p> <p>12 A Exactly.</p> <p>13 Q The mystery guest for 6, 7, 8 and 9 disagree</p> <p>14 with everybody?</p> <p>15 A Exactly.</p> <p>16 Q The Don Carlos study disagrees with the</p> <p>17 previously-mentioned sources?</p> <p>18 A Except for the two faults.</p> <p>19 MR. RILEY: Thank you, Doctor. I have</p> <p>20 no further questions.</p> <p>21 JUDGE EGAN: Go ahead.</p> <p>22 CLARIFYING EXAMINATION</p> <p>23 BY JUDGE WALSTON:</p> <p>24 Q I want to ask one clarifying question. And I</p> <p>25 think I've understood this, but I just want to be</p>	<p style="text-align: right;">Page 1381</p> <p>1 suggesting that the Exxon experts, the Humble experts,</p> <p>2 the mystery guest experts -- is that what he's</p> <p>3 referring to? Which experts? There's only two</p> <p>4 experts have testified -- two experts have testified</p> <p>5 they agree.</p> <p>6 JUDGE EGAN: Well, I understood his</p> <p>7 question, but would you like to rephrase it?</p> <p>8 MR. WALKER: No, Your Honor, I'll give</p> <p>9 it up. Thank you.</p> <p>10 (Laughter)</p> <p>11 No other questions.</p> <p>12 JUDGE EGAN: Thank you. Anyone else?</p> <p>13 All right. Then you are excused. Thank</p> <p>14 you.</p> <p>15 MR. RILEY: Back to me?</p> <p>16 JUDGE EGAN: Next witness.</p> <p>17 MR. RILEY: Applicant calls Jenny Barry.</p> <p>18 Ms. Barry, could you step up to the witness stand?</p> <p>19 JUDGE EGAN: Would you swear Ms. Barry,</p> <p>20 please?</p> <p>21 (Witness sworn)</p> <p>22 JUDGE EGAN: Would you state your full</p> <p>23 name for the record?</p> <p>24 WITNESS BARRY: Jennifer Barry,</p> <p>25 B-a-r-r-y.</p>
<p style="text-align: right;">Page 1380</p> <p>1 clear; that let's say even if you are in error and all</p> <p>2 these people are correct and all these faults exist,</p> <p>3 it's still your opinion that there's nothing</p> <p>4 transmissive between the Cockfield formations and any</p> <p>5 formation above the Jackson shale?</p> <p>6 A Except for the big fault that's 4400 feet</p> <p>7 away.</p> <p>8 MR. RILEY: Above the --</p> <p>9 A Oh, oh, above the Jackson shale?</p> <p>10 Q Correct.</p> <p>11 A Oh. Right. Right.</p> <p>12 JUDGE WALSTON: Thank you. That's all.</p> <p>13 Do you have a follow-up?</p> <p>14 JUDGE EGAN: Let me just make sure.</p> <p>15 Lone Star has -- Go ahead, Mr. Walker.</p> <p>16 MR. WALKER: One final question, Your</p> <p>17 Honor.</p> <p>18 RECROSS-EXAMINATION</p> <p>19 BY MR. WALKER:</p> <p>20 Q Dr. Langhus, then it would appear that the</p> <p>21 applicant wants to pump nonhazardous industrial waste</p> <p>22 into a geologic formation where all of the experts</p> <p>23 involved geologically can't agree as to what the</p> <p>24 condition of the faulting is?</p> <p>25 MR. RILEY: Objection, unless counsel is</p>	<p style="text-align: right;">Page 1382</p> <p>1 JUDGE EGAN: You may proceed, Mr. Riley.</p> <p>2 MR. RILEY: Thank you.</p> <p>3 JENNIFER BARRY,</p> <p>4 having been duly sworn, testified as follows:</p> <p>5 DIRECT EXAMINATION</p> <p>6 BY MR. RILEY:</p> <p>7 Q Good afternoon, Ms. Barry.</p> <p>8 A Hi.</p> <p>9 MR. FORSBERG: Your Honor, may I</p> <p>10 interject? I'm sorry. Was this witness designated as</p> <p>11 a rebuttal witness?</p> <p>12 MR. RILEY: She's not an expert. She's</p> <p>13 a fact witness --</p> <p>14 MR. FORSBERG: I'm sorry, a fact</p> <p>15 witness. Was she designated as a fact witness in</p> <p>16 rebuttal?</p> <p>17 MR. RILEY: She was not.</p> <p>18 MR. FORSBERG: Well, I would object</p> <p>19 that -- I don't know who this person is. She's never</p> <p>20 been identified before.</p> <p>21 MR. RILEY: She's a paralegals in my</p> <p>22 office. She went to the Railroad Commission and</p> <p>23 investigated Well 129 -- 29 and is only going to be</p> <p>24 able to testify that she -- as to her experience at</p> <p>25 the Railroad Commission in trying to find well records</p>

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<p style="text-align: right;">Page 1383</p> <p>1 regarding Well 129.</p> <p>2 MR. FORSBERG: Well, they clearly would</p> <p>3 have known about that before. They could have</p> <p>4 designated her before. I object again that --</p> <p>5 MR. RILEY: In fact, that investigation</p> <p>6 just ended moments before. And, frankly, because time</p> <p>7 ran out before calling Ms. Barry, since we were in</p> <p>8 contact with the Railroad Commission as often as we</p> <p>9 could be over the last several days. So --</p> <p>10 MR. FORSBERG: I mean, it's one thing to</p> <p>11 designate a witness the night before, I guess, but to</p> <p>12 not even designate them at all and just call them -- I</p> <p>13 mean, I just don't see that being proper.</p> <p>14 MR. GERSHON: And we've been patient,</p> <p>15 but, I'm sorry, the procedural schedule was one that</p> <p>16 was really driven by the applicant. And we've all</p> <p>17 abided by it. And frankly we're inclined to seek</p> <p>18 continuances at multiple points in this proceeding and</p> <p>19 it's just wholly unacceptable for the applicant to be</p> <p>20 playing it both ways.</p> <p>21 MR. RILEY: I don't know how I'm playing</p> <p>22 it both ways, Judge. We hoped by this time to have an</p> <p>23 affidavit from an employee of the Railroad Commission.</p> <p>24 We were disappointed in that effort. But on the point</p> <p>25 raised in the testimony of Mr. Wilson, about Well 29</p>	<p style="text-align: right;">Page 1385</p> <p>1 between 129 and 29. Was that in his prefiled or was</p> <p>2 that something that was just brought out --</p> <p>3 MR. RILEY: No, it was just brought out</p> <p>4 on redirect, as I recall.</p> <p>5 JUDGE WALSTON: So you didn't have that</p> <p>6 testimony before about the 129 and 29?</p> <p>7 MR. RILEY: That's correct.</p> <p>8 MR. FORSBERG: Well, the issues with</p> <p>9 regards to the identification of wells has always been</p> <p>10 an issue. And again, I just go back to the fact that</p> <p>11 if it was -- I mean --</p> <p>12 MR. RILEY: Mr. Wilson made a --</p> <p>13 MR. FORSBERG: -- from the Railroad</p> <p>14 Commission here as opposed to the paralegals for the</p> <p>15 applicant -- and they still haven't identified them</p> <p>16 previous to right now.</p> <p>17 JUDGE EGAN: We're going to allow the</p> <p>18 witness to testify. However, if you want to</p> <p>19 supplement we'll leave the record open for you to</p> <p>20 supplement, if you can find something to the contrary.</p> <p>21 MR. RILEY: In fact, we'd like the same</p> <p>22 opportunity since we believe we will, before the week</p> <p>23 is closed, have information from the Railroad</p> <p>24 Commission that confirms what Ms. Barry is about to</p> <p>25 testify to. So if you want to leave the record open,</p>
<p style="text-align: right;">Page 1384</p> <p>1 and Well 129 and the applicant's designated Well C428,</p> <p>2 Ms. Barry is the witness to describe what happened at</p> <p>3 the Railroad Commission and what the Railroad</p> <p>4 Commission said regarding Well 129.</p> <p>5 JUDGE EGAN: She's going to be repeating</p> <p>6 what the Railroad Commission said --</p> <p>7 MR. FORSBERG: That's hearsay.</p> <p>8 MR. RILEY: It's not hearsay. She is</p> <p>9 going to be giving in evidence an indication by the</p> <p>10 Railroad Commission. She's going to testify that</p> <p>11 that's the note she was given by a Railroad Commission</p> <p>12 employee indicating that Well 129 and 29 are the same.</p> <p>13 And that she was given records, which are now in</p> <p>14 evidence, as the records for Well 29.</p> <p>15 MR. FORSBERG: Your Honor, again, she's</p> <p>16 a paralegal -- I mean, I love paralegals. I wouldn't</p> <p>17 be in this profession without them. But she's</p> <p>18 testifying about what -- what's going on at the</p> <p>19 Railroad Commission now?</p> <p>20 MR. RILEY: She was at the Railroad</p> <p>21 Commission. She's testifying from her personal</p> <p>22 experience and observations. That's all she's going</p> <p>23 to testify to. She's a fact witness.</p> <p>24 JUDGE WALSTON: On Mr. Wilson's</p> <p>25 testimony I recall him testifying about the difference</p>	<p style="text-align: right;">Page 1386</p> <p>1 we can certainly -- we'd certainly like that</p> <p>2 opportunity.</p> <p>3 JUDGE EGAN: We're going to allow her to</p> <p>4 testify. The opportunity is for them to call somebody</p> <p>5 to contradict what she's saying, if they choose to</p> <p>6 leave the record open --</p> <p>7 MR. RILEY: Thank you, Judge.</p> <p>8 MR. FORSBERG: Is that going to leave</p> <p>9 also the opportunity to call our own witnesses and</p> <p>10 reconvene the session?</p> <p>11 MR. RILEY: There's always -- I'm sorry.</p> <p>12 JUDGE WALSTON: Go ahead.</p> <p>13 MR. RILEY: There is opportunity in the</p> <p>14 TCEQ rules for just such an event should circumstances</p> <p>15 warrant such an event. But I don't think that</p> <p>16 decision has to be made now.</p> <p>17 MR. FORSBERG: I just want to know if</p> <p>18 it's an available option. I'm not asking for --</p> <p>19 JUDGE WALSTON: It's an available</p> <p>20 option. And frankly my concern is that since there</p> <p>21 has been some confusion about this record -- I mean</p> <p>22 about this well, which well it is or which well it</p> <p>23 isn't, that for purposes of providing information to</p> <p>24 the Commission to make a decision, it would be good to</p> <p>25 have the information to clear it up if we can. But if</p>

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<p style="text-align: right;">Page 1387</p> <p>1 y'all later determine you disagree with the 2 information she provides, we would certainly give 3 y'all an opportunity to file additional information or 4 if you had to call a witness to do that. 5 MR. FORSBERG: Thank you, Your Honor. 6 JUDGE EGAN: Okay. Go ahead. 7 (TexCom Exhibit No. 77 marked) 8 Q (By Mr. Riley) I think we were just 9 exchanging greetings. Good afternoon, Ms. Barry. 10 A Good afternoon. 11 Q Ms. Barry, by whom are you employed? 12 A Vinson & Elkins. 13 Q I'm sorry, could you move the mic closer and 14 check the connection because I can't hear you at all. 15 A Vinson & Elkins. 16 Q Thank you. Ms. Barry, have you ever 17 testified before? 18 A No, never. 19 Q As part of your work responsibilities with 20 Vinson & Elkins, was a request made that you go to the 21 Railroad Commission and investigate or look for 22 records regarding a well that has been identified in 23 this proceeding as C-428 -- I'm sorry, you probably 24 know it as Well 29 and/or Well 129? 25 A Yes.</p>	<p style="text-align: right;">Page 1389</p> <p>1 we'll allow it. 2 Q (By Mr. Riley) I'm asking you how it 3 operates. In your experience, how does it happen? Do 4 you go to a window and ask for information? 5 A Yes. 6 Q Then they point you to a shelf or does 7 something else happen? 8 A There's a research desk, and you go -- they 9 ask you what you need, you sign in, and they pull the 10 records for you. So it's not self-service. 11 Q Now, somewhere in this room there is a 12 post-it note that has been labeled as TexCom Exhibit 13 77. Do you have that in front of you? 14 A Yes. 15 Q Is that the original Post-it note that -- was 16 it an original Post-it note? 17 A No, it's not an original. 18 Q I'm sorry, the original I think is with the 19 Reporter. Do you have a copy of the original? 20 A I have a copy. 21 Q It might be necessary for you just to 22 authenticate the original, which I think is with the 23 Reporter. 24 A This is the original. 25 Q All right. Is that your handwriting on the</p>
<p style="text-align: right;">Page 1388</p> <p>1 Q And did you go to the Railroad Commission as 2 part of that assignment? 3 A I did. 4 Q What happened at the Railroad Commission? 5 What did you do, I should say? 6 A Sure. I asked staff at Central Records at 7 the Railroad Commission to pull well records for Well 8 No. 129. I had some basic information about it. They 9 asked me a few follow-up questions, and they went to 10 microfilm and they pulled the records for me. 11 Q And when they pulled those records, were 12 those well -- excuse me, were those records -- did 13 they indicate the No. 129 or 29? 14 A 29. 15 Q In the Railroad Commission recordkeeping 16 system, are the records available for you to do your 17 own work? In other words, could you go to the files 18 yourself and investigate Well 129 personally? 19 A No, it's not -- 20 MR. FORSBERG: Objection, Your Honor. 21 I'm sorry, I was trying to get an objection before she 22 answered. I don't think there's been any foundation 23 to her ability to testify about the recordkeeping 24 system at the Railroad Commission. 25 JUDGE EGAN: For her limited experience,</p>	<p style="text-align: right;">Page 1390</p> <p>1 exhibit? 2 A No. 3 Q And whose handwriting is it, if you know? 4 A I believe it is Bobby, the research associate 5 at the Railroad Commission. 6 Q Did this Post-it note come into your 7 possession through some mechanism? 8 A He handed it to me. 9 Q All right. At the time you were requesting 10 information on Well 129? 11 A Yes. 12 MR. RILEY: Thank you. I have no 13 further questions. 14 JUDGE WALSTON: Were you going to offer 15 it in evidence? 16 MR. RILEY: Yes, I'm sorry. I would 17 offer Exhibit 77 into evidence. 18 MR. FORSBERG: Objection, Your Honor. 19 It's -- I mean, they couldn't get something on 20 letterhead? I mean, it's a Post-it note. I mean, 21 it's not certified by anyone. There's no affidavit. 22 I mean, we have a paralegal saying it's a note that 23 was received from someone named Bobby. 24 MR. RILEY: I don't know what 25 Mr. Forsberg's problem is with paralegals, but I don't</p>

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<p>1 know that to disqualify someone --</p> <p>2 JUDGE EGAN: You don't need to argue.</p> <p>3 What's the basis of your -- legal basis for your</p> <p>4 objection?</p> <p>5 MR. FORSBERG: It's not certified from a</p> <p>6 public agency. It's not authenticated in any way by</p> <p>7 anyone qualified to authenticate it. We have no way</p> <p>8 to ensure that that's an actual document from -- we</p> <p>9 weren't even given a full name to ensure who wrote the</p> <p>10 note to verify that information.</p> <p>11 JUDGE EGAN: TexCom Exhibit No. 77 is</p> <p>12 going to be admitted with the limited -- with the</p> <p>13 limitation that it is not properly certified or</p> <p>14 authenticated by any -- on this document, and that it</p> <p>15 is a note received from somebody named Bobby.</p> <p>16 MR. FORSBERG: Thank you, Your Honor.</p> <p>17 JUDGE EGAN: It will go to the weight as</p> <p>18 to how much credibility we place on it.</p> <p>19 MR. FORSBERG: Thank you.</p> <p>20 (TexCom Exhibit No. 77 admitted)</p> <p>21 JUDGE EGAN: You passed the witness?</p> <p>22 MR. RILEY: I did.</p> <p>23 JUDGE EGAN: Lone Star?</p> <p>24 MR. HILL: No questions.</p> <p>25 JUDGE EGAN: Ms. Stewart? Mr. Walker?</p>	<p>1 He's not been previously designated. They've</p> <p>2 obviously even -- they've designated him untimely --</p> <p>3 well, he was designated, I guess, last night at 9</p> <p>4 o'clock. They've known about him for several days --</p> <p>5 or at least a few days. And they certainly have</p> <p>6 handed us wads of paper almost every morning, so I'm</p> <p>7 not exactly sure why they failed to provide us any</p> <p>8 information with regards to Mr. Graves. We have no</p> <p>9 ability at this point to really research any of his</p> <p>10 facts or findings or anything to that extent.</p> <p>11 Furthermore, he's offering issues with</p> <p>12 regards to traffic analysis from my understanding of</p> <p>13 his prefiled testimony. That doesn't rebut anything</p> <p>14 that didn't exist prior with the prefiled testimony.</p> <p>15 All issues related to traffic -- I mean, the prefiled</p> <p>16 testimony -- are the same as they were before the case</p> <p>17 from the Third Court of Appeals -- you know, two weeks</p> <p>18 ago or a week-and-a-half ago.</p> <p>19 So I'm not -- so the objection is he was</p> <p>20 untimely because they knew about him days ago and was</p> <p>21 obviously after the rebuttal witness deadline. I'm</p> <p>22 sorry, also that -- that's it. I'm sorry, Your Honor.</p> <p>23 It's getting late in the day.</p> <p>24 JUDGE EGAN: Your objection is</p> <p>25 overruled. The traffic analysis I don't believe is</p>
Page 1392	Page 1394
<p>1 MR. WALKER: No questions, Your Honor.</p> <p>2 JUDGE EGAN: Mr. Forsberg?</p> <p>3 MR. FORSBERG: As tempting as it is, no</p> <p>4 questions, Your Honor.</p> <p>5 JUDGE EGAN: As what?</p> <p>6 MR. FORSBERG: Strike that. No</p> <p>7 questions, Your Honor.</p> <p>8 JUDGE EGAN: Ms. Collins?</p> <p>9 MS. COLLINS: No questions. Thank you.</p> <p>10 JUDGE EGAN: Mr. Williams?</p> <p>11 MR. WILLIAMS: No questions.</p> <p>12 JUDGE EGAN: Okay. You are excused.</p> <p>13 MR. RILEY: Applicant calls Mr. Scott</p> <p>14 Graves.</p> <p>15 MR. FORSBERG: I believe there's still</p> <p>16 an objection pending from the Individual Protestants</p> <p>17 regarding this witness. I don't know if anyone else</p> <p>18 has joined that objection.</p> <p>19 JUDGE EGAN: Can you move that --</p> <p>20 MR. FORSBERG: Sorry about that.</p> <p>21 JUDGE EGAN: Mr. Graves, go ahead and</p> <p>22 head up there. And the objection is that he has not</p> <p>23 been previously designated?</p> <p>24 MR. FORSBERG: Your Honor, there's</p> <p>25 really two objections. He's not been -- well, three.</p>	<p>1 customary in these cases until the Third Court of</p> <p>2 Appeals decision came down. So it was something new</p> <p>3 that was added by that decision. We're going to go</p> <p>4 ahead and allow his testimony; however, I think we've</p> <p>5 indicated, as with Ms. Barry, that if you asked that</p> <p>6 the record be left open -- I'm not sure it's going to</p> <p>7 be necessary, but we'll certainly entertain that if</p> <p>8 you choose to research that at the end of his</p> <p>9 testimony.</p> <p>10 MR. WALKER: Your Honor --</p> <p>11 MR. FORSBERG: Thank you.</p> <p>12 MR. WALKER: I'm sorry.</p> <p>13 MR. FORSBERG: Go ahead.</p> <p>14 MR. WALKER: If I could -- I was waiting</p> <p>15 for Mr. Forsberg to complete his objection. My</p> <p>16 objection is that this is not properly rebuttal</p> <p>17 testimony of anything that has transpired except the</p> <p>18 prefiled testimony. And do I understand the Court to</p> <p>19 be ruling that this evidence is being admitted because</p> <p>20 of the Third Court of Appeals opinion?</p> <p>21 JUDGE EGAN: It is something new that</p> <p>22 has come up through the Third Court of Appeals</p> <p>23 decision, and I think that -- you know, we're charged</p> <p>24 with making sure that we take enough evidence to</p> <p>25 address the concerns that the Commission may have.</p>

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<p style="text-align: right;">Page 1395</p> <p>1 And since this is not an issue that they typically 2 address, they will be addressing it given -- more than 3 likely given the Third Court of Appeals decision. 4 MR. WALKER: If I may, Your Honor, to 5 point out -- and I do recognize the Court's 6 explanation -- there was traffic information filed in 7 the prefiled testimony. And whether or not this Court 8 would have ruled that relevant, the applicant had 9 knowledge as of the 13th of November that two of the 10 Aligned Protestants' witnesses were discussing traffic 11 issues. That certainly should have put the applicant 12 on notice that that was -- at least as far as we were 13 concerned -- an issue in the case. And he was 14 absolutely not timely in responding to that within the 15 Court's own deadline of November 30th to address that. 16 I think to wait until an appellate court endorsed our 17 view of the case is -- well, it's handy and 18 coincidentally handy for the applicant -- but I think 19 it's outside the rules. He should have responded to 20 traffic issues within your deadline, and he did not do 21 so by designating a witness. That's what we object 22 to. 23 JUDGE EGAN: All right. I'm aware of 24 your argument the same as Mr. Forsberg. 25 MR. RILEY: May I just add one thing to</p>	<p style="text-align: right;">Page 1397</p> <p>1 one quick question. 2 MR. RILEY: Certainly. 3 JUDGE WALSTON: Is there an Exhibit 78 4 and 79? 5 MR. RILEY: No, we skipped the numbering 6 just we could have it prepared, so we went ahead and 7 skipped 78 and 79. 8 JUDGE EGAN: All right. Thank you. 9 MR. RILEY: May I proceed? 10 JUDGE EGAN: Yes. 11 SCOTT GRAVES, 12 having been duly sworn, testified as follows: 13 DIRECT EXAMINATION 14 BY MR. RILEY: 15 Q Good afternoon, Mr. Graves. 16 A Good afternoon. 17 Q Mr. Graves, by whom are you employed, sir? 18 A By Geosyntec Consultants, an engineering 19 firm. 20 Q Are you an engineer yourself? 21 A Yes, I am. 22 Q Are you licensed to practice in the field of 23 engineering in any states? 24 A Yes, I am, including Texas. 25 Q When were you retained by my law firm and/or</p>
<p style="text-align: right;">Page 1396</p> <p>1 the record? 2 JUDGE EGAN: Yes. 3 MR. RILEY: We had a preliminary hearing 4 in this matter, which was after the Third Court had 5 ruled -- days before is my recollection was the Third 6 Court opinion issued. As we sat at the preliminary 7 hearing we were still uncertain of the significance of 8 the Third Court's opinion as pertains to any 9 particular issue. We had some -- we made some 10 arguments on that regard in a preliminary hearing. 11 However, at that time we specifically 12 withdrew our objection to testimony that was 13 introduced in the prefiled testimony by both 14 Montgomery County and City of Conroe, Aligned 15 Protestants, as well as the Individuals, and made it 16 known to the parties that in all likelihood we were 17 going to call a rebuttal witness to testify on traffic 18 issues. So I don't want the record to be unclear that 19 we -- for it to be suggested that we have given no 20 prior notice of this witness before today. 21 JUDGE EGAN: All right. Let's proceed. 22 Did we swear this witness in yet? 23 (Witness sworn) 24 (TexCom Exhibit Nos. 80 - 83 marked) 25 JUDGE WALSTON: Mr. Riley, we just had</p>	<p style="text-align: right;">Page 1398</p> <p>1 TexCom to develop some information regarding traffic 2 that is the subject of your testimony this afternoon? 3 A It was -- it was midday last Friday. 4 Q And since midday last Friday, have you 5 engaged in analysis of the traffic and -- certain 6 aspects of the traffic around the proposed TexCom 7 facility? 8 A Yes, I have. 9 Q Have you also had the opportunity to prepare 10 certain prefiled testimony that I think is now before 11 you with exhibits attached to the prefiled that has 12 been identified as TexCom Exhibit 80, 81, which I 13 believe is your resume, 82 which is a map I think that 14 you've developed, and 83, which is another map that I 15 think you've developed? 16 A Yes, that's correct. 17 Q All right. And do you have those before you? 18 A Yes, I do. 19 Q Could you take a moment and make sure that 20 the prefiled testimony -- or the testimony as well as 21 the exhibits are accurate and that if asked those 22 questions live this afternoon, you would give those 23 answers? 24 A Yes, that's correct. 25 MR. RILEY: All right. At this time,</p>

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<p>Page 1399</p> <p>1 Your Honor, applicant offers into evidence Exhibits 2 80, 81, 82 and 83. 3 JUDGE EGAN: Rather than have you 4 restate your objections, I'm going accept the 5 objections previously raised by Mr. Forsberg and 6 Mr. Walker as continuing objections to Exhibits 80 7 through 83. But are there any additional objections 8 that any party wishes to raise? 9 MR. WALKER: No. 10 JUDGE EGAN: All right. Having 11 overruled those objections, TexCom Exhibits 80, 81, 82 12 and 83 are admitted. 13 (TexCom Exhibit Nos. 80 - 83 admitted) 14 MR. FORSBERG: I'm sorry, Your Honor, I 15 have a -- just a small matter in that the copy I got 16 from the applicant is just -- it omits Exhibit 83. I 17 don't have an Exhibit 83. 18 JUDGE EGAN: Can you make sure to give 19 Mr. Forsberg a copy of Exhibit 83? 20 MR. FORSBERG: Oh, it fell off. I'm 21 sorry. 22 MR. RILEY: Okay. 23 JUDGE EGAN: You're got it? 24 MR. FORSBERG: Got it. Thank you. 25 JUDGE EGAN: All right. Mr. -- or Lone</p> <p>Page 1400</p> <p>1 Star, Mr. Hill or Mr. Gershon? 2 Ms. Stewart or Mr. Walker, and cross? 3 MR. WALKER: Yes, Your Honor, I do have 4 a question or two. 5 CROSS-EXAMINATION 6 BY MR. WALKER: 7 Q Mr. Graves, I think in East Texas it's 8 evening, so good evening, sir. I'm David Walker. 9 A Good evening. 10 MR. RILEY: And, Mr. Walker, I'm sorry 11 to interrupt you again, but I'm having trouble hearing 12 you. 13 JUDGE WALSTON: Mr. Graves, if you could 14 also get that microphone -- 15 WITNESS GRAVES: How's this? 16 JUDGE WALSTON: That's good. 17 MR. WALKER: If I could have just a 18 second, Your Honor, I lost my place. 19 Q (By Mr. Walker) Mr. Graves, if I may direct 20 your attention to -- I believe it's Page 15 of your 21 prefiled testimony? 22 A Okay. 23 Q Starting at the top of the page on Line 1, I 24 believe the question asked of you is would moving the 25 site entrance to Farm to Market Road 3083 entail any</p>	<p>Page 1401</p> <p>1 terms or permitting or design. Do you understand that 2 question? 3 A Yes, it asks what would it entail. 4 Q If fact, that -- changing that site entrance 5 to the -- I think it's some 400 feet of frontage there 6 that the applicant has along 3083 would require 7 requesting of the Texas Department of Transportation a 8 permit to install a driveway. Is that correct? 9 A Yes, that's my understanding, that a driveway 10 permit application would be submitted to TxDOT. I was 11 confused by when you mentioned 400 feet of frontage on 12 FM 3083 because maps that I looked at showed a much 13 narrower corridor connecting to FM 3083. 14 Q I think I -- yes, sir, thank you. It's about 15 72 feet or so. Is that correct? 16 A That sounds about right. 17 Q Yeah, I don't know where I got 400. Too much 18 Red Bull. 19 Let me ask you if you have any knowledge 20 concerning the spacing of driveway permits that TxDOT 21 uses in its permitting process? 22 A I can't recall any details about things like 23 that. 24 Q All right. Are you therefore not familiar 25 with whether or not TxDOT has criteria and limitations</p> <p>Page 1402</p> <p>1 on how closely they will allow driveways to be 2 constructed on their state-maintained roadways? 3 A I know that TxDOT does have criteria for 4 that. I don't know what the distances are. 5 Q All right. 6 A So I'm aware of it. 7 Q And with respect to a driveway that would 8 constitute an entrance to an industrial site as 9 opposed to a driveway that might constitute an 10 entrance to, for instance, a residential site, do you 11 know if TxDOT applies any different criteria? 12 A I don't know that. 13 Q All right. So, Mr. Graves, if in fact the 14 Texas Department of Transportation had a limitation or 15 a distance within which they would not allow multiple 16 driveways, are you telling this Court that you're 17 unfamiliar with that kind of limitation? 18 MR. RILEY: Objection to form -- I'm 19 sorry, I'm confused by your question. 20 JUDGE EGAN: If the witness is 21 confused -- 22 MR. WALKER: I'll be glad to restate it, 23 Your Honor. 24 A Could you, please? 25 Q (By Mr. Walker) All right. If in fact the</p>
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<p style="text-align: right;">Page 1403</p> <p>1 Texas Department of Transportation would not typically 2 allow a new driveway to be constructed within a 3 certain distance of an existing driveway, is it your 4 testimony that you're unfamiliar with that 5 restriction? 6 A I would say, yes, I'm unfamiliar with whether 7 there is a certain separation distance between 8 adjacent driveways or what that particular distance 9 is. 10 Q Okay. And thank you for that very clear 11 response, sir. And are you aware also that these 12 restrictions are different depending upon the speed 13 limit -- the posted speed limit that is at issue along 14 a given state-maintained roadway? 15 A I don't know whether speed limit is a factor 16 in that. 17 Q Okay. So is it quite possible then, 18 Mr. Graves, that -- given the 72 feet of frontage and 19 given the speed limit of FM 3083, isn't it quite 20 possible that TxDOT would be reluctant, if not 21 unwilling, to permit a driveway at this particular 22 location or do you know that? 23 A I don't know for certain one way or the other 24 the answer to that. 25 Q All right. Let me ask you also, Mr. Graves,</p>	<p style="text-align: right;">Page 1405</p> <p>1 would be allowed to be an entrance to the site? 2 MR. RILEY: Objection. I know that it's 3 late, but "say grace over" is, I think, an 4 objectionable -- 5 JUDGE EGAN: Rephrase your question. 6 MR. WALKER: Thank you, Your Honor. 7 Q (By Mr. Walker) Mr. Graves, before the Texas 8 Department of Transportation would approve the 9 construction of a driveway for industrial use and the 10 entry to this site at issue, would you agree with me 11 there would be a number of issues that TxDOT would 12 have to consider and approve before such a driveway 13 entrance could be constructed? 14 A They do consider several factors. Having 15 been through the process, yes, that's what they do. 16 Q And is there any guarantee, Mr. Graves, that 17 approval would be given from TxDOT? 18 A No, there's not. 19 MR. WALKER: Your Honor, could I have 20 just a moment? 21 JUDGE EGAN: Yes. 22 Q (By Mr. Walker) With respect to the frontage 23 that's at issue here that would at least potentially 24 allow entry into the TexCom site, do you know, 25 Mr. Graves, how close that frontage is to any</p>
<p style="text-align: right;">Page 1404</p> <p>1 if you know, in your area of experience, whether or 2 not FM 3083 is a two-lane road? 3 A In the vicinity of the proposed facility it 4 is a two-lane road, yes. 5 Q Very well. Do you know whether or not the 6 Texas Department of Transportation -- if a driveway 7 was permitted to enter the proposed site from FM 3083, 8 do you know whether or not TxDOT would also 9 potentially require the construction of a left-turn 10 lane at that location as an additional safety 11 requirement? 12 A In my experience that is part of the reason 13 for a driveway permit application is for TxDOT to 14 evaluate that and come to a decision on whether they 15 would recommend -- 16 JUDGE EGAN: Would recommend what? 17 WITNESS GRAVES: Whether they would 18 recommend a turning lane or a deceleration lane or 19 some kind of an improvement to the roadway to 20 accommodate the new facility -- or the new driveway. 21 Q (By Mr. Walker) Given our discussion up to 22 this point, Mr. Graves, would you agree with me that 23 there are at least two, perhaps three, significant 24 issues that the Texas Department of Transportation 25 would have to say grace over for this 72-foot frontage</p>	<p style="text-align: right;">Page 1406</p> <p>1 adjoining driveway? 2 A I don't know for certain. I'm thinking of an 3 adjacent landowners' map that was in part of the 4 permit application that shows a number of properties 5 adjacent to the frontage in question, but I don't know 6 specifically where the driveway is on each of those 7 properties. That's something that would need to be 8 looked at. 9 MR. WALKER: Thank you, sir. 10 Your Honor, I'll pass the witness. 11 JUDGE EGAN: Okay. Mr. Forsberg? 12 MR. FORSBERG: Yes, Your Honors. 13 CROSS-EXAMINATION 14 BY MR. FORSBERG: 15 Q Mr. Graves, good afternoon. 16 A Good afternoon. 17 Q You had mentioned that you were retained 18 sometime last -- correct me if I'm wrong -- Friday 19 with regards to the issue of traffic analysis? 20 A That's correct. 21 Q Were you retained in any other capacity with 22 regards to TexCom before that date? 23 A No. 24 Q Okay. Have you done any work for TexCom 25 before?</p>

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Page 1407	<p>1 A No, I have not.</p> <p>2 Q Have you been retained by Vinson & Elkins</p> <p>3 before?</p> <p>4 A Yes, I have.</p> <p>5 Q On issues similar to the one that you're</p> <p>6 testifying about today?</p> <p>7 A Well, I'm thinking of one particular</p> <p>8 instance. I believe it was the only instance I've</p> <p>9 been retained by Vinson & Elkins. It was to peer</p> <p>10 review a much larger permit application for a solid</p> <p>11 waste landfill, part of which included a traffic</p> <p>12 study. But it was -- that was one piece of a much</p> <p>13 larger engineering permit application.</p> <p>14 Q Okay. Are you currently retained by Vinson &</p> <p>15 Elkins on any other matters?</p> <p>16 A No, I'm not.</p> <p>17 Q You traveled to the site of the proposed</p> <p>18 TexCom facility?</p> <p>19 A Yes, I did.</p> <p>20 Q When was that?</p> <p>21 A That was on last Saturday. I'd have to check</p> <p>22 my calendar to remember the date.</p> <p>23 Q How many weekdays did you spend at the site?</p> <p>24 A No weekdays. I visited the site on just last</p> <p>25 Saturday.</p>	Page 1409	<p>1 Q Is the information you base your traffic on,</p> <p>2 is that Exhibit 83 in your prefiled testimony?</p> <p>3 A Let me take a look. Yes, that's correct.</p> <p>4 Q And is the area where the site is potentially</p> <p>5 going to be located that we're here about today, is</p> <p>6 that in the white or yellow area?</p> <p>7 A It's in a white area.</p> <p>8 Q What does that mean according to the legend?</p> <p>9 A It means it's not in an urban area. The</p> <p>10 yellow shaded areas are urban areas, so it's not an</p> <p>11 urban area.</p> <p>12 Q So what does that mean in regards to traffic?</p> <p>13 A Well, nothing I guess. It means -- if it's</p> <p>14 not urban, it means the land use is not urban. It</p> <p>15 could be suburban or rural. From my observations,</p> <p>16 it's a rural area in general around the proposed</p> <p>17 facility.</p> <p>18 Q What on this map tells you what the volume of</p> <p>19 traffic is located around the proposed facility?</p> <p>20 A There are -- a lot of this is small print.</p> <p>21 And there are small red numbers, and then in other</p> <p>22 places there are small black numbers that represent,</p> <p>23 basically, daily traffic counts, average daily traffic</p> <p>24 counts, at different points on the road. And there's</p> <p>25 along -- at the location where the traffic count was</p>
Page 1408	<p>1 Q So your review of traffic was based upon</p> <p>2 weekend traffic?</p> <p>3 A Actually I -- I paid attention to the traffic</p> <p>4 during my site visit, but my main intent was to just</p> <p>5 observe the conditions of the roadways themselves, the</p> <p>6 geometry and, you know, the type of pavement and</p> <p>7 really the physical surroundings of the area. Of</p> <p>8 course I paid attention to traffic, but I wasn't</p> <p>9 studying traffic during that site visit I would say,</p> <p>10 at least not in a quantitative sense.</p> <p>11 Q So your purpose of going to the site wasn't</p> <p>12 to count vehicles?</p> <p>13 A No, it was not.</p> <p>14 Q Would you agree with me that the amount of</p> <p>15 time you've had to do this -- with regards to doing</p> <p>16 sort of a quantitative visual study -- you didn't have</p> <p>17 adequate time to do that?</p> <p>18 A Well, I'm not sure if I -- if I can answer</p> <p>19 that one way or the other. My first thought is that I</p> <p>20 was able to obtain TxDOT traffic counts from 2006 that</p> <p>21 are much more comprehensive than any study that I</p> <p>22 could undertake in a period of a couple of days or</p> <p>23 weeks or whatever. And that's, in my opinion,</p> <p>24 sufficient and recent traffic information to perform</p> <p>25 the analysis that I've done.</p>	Page 1410	<p>1 taken there's a little tickmark across the road so you</p> <p>2 can see what road it corresponds to.</p> <p>3 Q Is that near the 336 number, the tickmark you</p> <p>4 were talking about?</p> <p>5 A Well, let me give you one example. Loop 336</p> <p>6 is on the -- is a loop. It's kind of a semi-circle</p> <p>7 like a backwards C in the -- kind of the middle</p> <p>8 portion of the page. So you can see Loop 336, and it</p> <p>9 is labeled so the number -- the small number 336 is</p> <p>10 just the label for the road designation. The</p> <p>11 little --</p> <p>12 Q I'm sorry. Go ahead. I thought you were</p> <p>13 finished.</p> <p>14 A I hope I've oriented everyone enough to see</p> <p>15 what piece I'm talking about. So where the road is</p> <p>16 labeled as 336, Loop 336, a little bit to the left of</p> <p>17 that, which is getting towards the left portion of</p> <p>18 this map, there's a number 12,400. And that</p> <p>19 corresponds to the average annual daily traffic at</p> <p>20 that point on Loop 336.</p> <p>21 Q What's the distinction between red and black</p> <p>22 numbers?</p> <p>23 A The black numbers correspond to what's called</p> <p>24 average annual daily traffic. The red numbers</p> <p>25 correspond to average daily traffic.</p>

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<p style="text-align: right;">Page 1411</p> <p>1 Q Which numbers did you rely upon?</p> <p>2 A I used whatever information was available for</p> <p>3 the segment of road that I was interested in. So</p> <p>4 for -- it was some of each number. It depended on</p> <p>5 which segment I was looking at.</p> <p>6 JUDGE EGAN: What was the two -- black</p> <p>7 is what again?</p> <p>8 WITNESS GRAVES: Black is average annual</p> <p>9 daily traffic.</p> <p>10 JUDGE EGAN: And what is red?</p> <p>11 WITNESS GRAVES: Red is average daily</p> <p>12 traffic. So both numbers are vehicles per day, and</p> <p>13 both represent an average number of vehicles per day.</p> <p>14 The only difference is average annual means a study --</p> <p>15 a traffic count study was actually done over at least</p> <p>16 a year period. So a very long period of time, at</p> <p>17 least a year. And you take the average of that whole</p> <p>18 time frame and that's your average number of vehicles</p> <p>19 per day.</p> <p>20 The red numbers are average daily</p> <p>21 traffic, which is a shorter duration study. Maybe it</p> <p>22 was done for a week, maybe a month -- something less</p> <p>23 than a year. And you take the average that you get</p> <p>24 over that shorter time on a daily basis and that's</p> <p>25 what's reported in the red numbers.</p>	<p style="text-align: right;">Page 1413</p> <p>1 Q Where they get real close --</p> <p>2 A -- 1210 is, yes.</p> <p>3 Q And there's three numbers there: 1660, 3070</p> <p>4 and 1210. Is that fair?</p> <p>5 A Yes, I see that.</p> <p>6 Q Are those numbers you used in determining</p> <p>7 your conclusions with regards to traffic?</p> <p>8 A I used the number 1210 --</p> <p>9 Q Okay.</p> <p>10 A -- in my evaluation and discussion in my</p> <p>11 prefiled testimony of the impact of the traffic on</p> <p>12 Creighton Road.</p> <p>13 Q How did you use the number 1210?</p> <p>14 A Well, 1210 represents essentially the</p> <p>15 existing traffic. And there's no facility in</p> <p>16 operation here, so it's just the existing traffic on</p> <p>17 Creighton Road very close to where the proposed</p> <p>18 entrance to the facility is. So that's a baseline.</p> <p>19 And then I estimated, based on the</p> <p>20 possible range in injection volumes and the</p> <p>21 corresponding traffic -- truck traffic that would be</p> <p>22 associated with that, I added that to the number to</p> <p>23 come up with the projected traffic after the facility</p> <p>24 was in operation. And by comparing those two numbers,</p> <p>25 I could calculate the percent increase in traffic due</p>
<p style="text-align: right;">Page 1412</p> <p>1 Q (By Mr. Forsberg) So if you go to the map</p> <p>2 where Crighton Road, for example, crosses with 3083 --</p> <p>3 do you see that point?</p> <p>4 JUDGE EGAN: My glasses are bad. Can</p> <p>5 somebody tell me where that point is? Can you see it?</p> <p>6 WITNESS GRAVES: It's near the yellow</p> <p>7 circle -- half circle towards -- a third of the way</p> <p>8 up.</p> <p>9 MR. RILEY: Judge, would it help -- I</p> <p>10 have a little magnifying glass if it would help you.</p> <p>11 I've been using it.</p> <p>12 JUDGE EGAN: That's okay.</p> <p>13 JUDGE WALSTON: Is it the one with the</p> <p>14 red 1210 on it?</p> <p>15 WITNESS GRAVES: Yes. Yes, Your Honor.</p> <p>16 JUDGE EGAN: Okay. Thank you. I'll</p> <p>17 bring a magnifying glass next time.</p> <p>18 A I'd like to -- sorry, is there a question?</p> <p>19 Q (By Mr. Forsberg) I was just -- do you see</p> <p>20 where that is located at?</p> <p>21 A Okay. I'd like to point out that Creighton</p> <p>22 Road does not actually connect to FM 3083, but I do</p> <p>23 see --</p> <p>24 Q Fair enough.</p> <p>25 A -- where you're talking about --</p>	<p style="text-align: right;">Page 1414</p> <p>1 to the facility.</p> <p>2 Q So you took 1210 and then projected traffic</p> <p>3 from the facility and came up with your conclusion.</p> <p>4 Is that fair?</p> <p>5 A Could you say that again?</p> <p>6 Q Sure. Sure. Absolutely. You took the</p> <p>7 number 1210 as your, I guess, average daily traffic.</p> <p>8 And that's sort of the way it is pre facility being</p> <p>9 open?</p> <p>10 A Correct.</p> <p>11 Q And then you compared that to -- with what</p> <p>12 you gather will be the traffic after the facility</p> <p>13 opens?</p> <p>14 A That's correct. And here again we're talking</p> <p>15 about for Creighton Road --</p> <p>16 Q Right.</p> <p>17 A -- which is one of the segments that traffic</p> <p>18 would need to use to enter and exit the facility. And</p> <p>19 then I did a similar type evaluation for some other</p> <p>20 major roads that traffic would likely use.</p> <p>21 Q And then on Exhibit 83, in the number 1210,</p> <p>22 what's included in that number as far as -- is that</p> <p>23 every vehicle that passes by?</p> <p>24 A It is. It's just every vehicle during the --</p> <p>25 if it was a 30-day traffic count and you would --</p>

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<p style="text-align: right;">Page 1415</p> <p>1 whatever that number summed up to be, divided by 30, 2 equals 1210. Just as an example that's how it's done. 3 Q Okay. So that's -- that includes, what, 4 cars, trucks, commercial vehicles, the whole gamut 5 there? 6 A It's just vehicles, no specificity on type of 7 vehicle. 8 Q Okay. In the legend where it distinguishes 9 between black and red, there's -- with regards to the 10 numbers in red, would you agree with me that it states 11 traffic volumes are not adjusted for trucks? 12 A Yes, I see that. 13 Q Did you adjust the 1210 to include for 14 existing commercial traffic? 15 A No, I did not, because I don't know the 16 subdivision or the breakdown of truck traffic versus 17 car traffic. 18 Q So in fact, the number 1210 has -- could have 19 no bearing on the actual traffic there if it's largely 20 commercial truck traffic? 21 A From what I saw, I don't believe there's a 22 lot of commercial truck traffic on that segment of the 23 road. 24 Q What you saw there on Saturday? 25 A What I saw there on Saturday, along with what</p>	<p style="text-align: right;">Page 1417</p> <p>1 is, in my estimation, not an appealing pathway for 2 trucks to take. I didn't see any significant 3 commercial or industrial facilities along that road 4 that would attract trucks or be the source of the 5 destination of a lot of heavy trucks. So there's -- 6 and a portion of that road also has a load restricted 7 bridge, which means a lot of trucks could not legally 8 travel on that road in the first place. 9 So for all those reasons, it does not 10 appear to be a significant pathway for large vehicles 11 or trucks. 12 Q What about 3083? 13 A 3083 is more of a highway. I would call it a 14 modern highway in good condition and the type of 15 highway that trucks would be expected to travel on to 16 get from, you know, Point A to Point B, whatever 17 destination or origination point they have. 18 Q Did you adjust any of the red numbers on 19 Exhibit No. 83 for trucks with regards to 3083? 20 A I did not use any red numbers on 3083 in my 21 evaluation. 22 Q Is it that there are no red numbers or you 23 just chose not to use them? 24 A There are no red numbers in the segment of 25 interest, but there is a black number, the average</p>
<p style="text-align: right;">Page 1416</p> <p>1 I know about traffic patterns and limitations that 2 would discourage trucks or heavy vehicles from using 3 that road in the first place. 4 Q Okay. So you felt there was so little 5 commercial traffic in the area that it didn't warrant 6 adjusting the 1210 figure? 7 A That's correct. 8 Q And how long were you at the site? 9 A Approximately two hours. 10 Q And I recall earlier that you testified you 11 weren't counting vehicles? 12 A That's correct. 13 Q But you're comfortable -- was it morning or 14 afternoon when you were there? 15 A It was approximately 11:00 a.m. until 1:00 16 p.m. 17 Q So you're comfortable with your conclusion 18 that there's very little truck traffic in the area 19 based upon your two hours there on a Saturday 20 afternoon a few days ago? 21 A Well, it's not only based on my observations 22 of the traffic during that time. It's also based on 23 the characteristics of the road, which I mentioned was 24 one of the reasons why I visited the site. And a road 25 like Creighton Road, which connects to Crighton Road,</p>	<p style="text-align: right;">Page 1418</p> <p>1 annual daily traffic, for the segment that I'm 2 interested in. So that's the number I used. 3 Q So are you saying that you are not interested 4 in any area that is outside that 9400 number in black? 5 A For my study I was not explicitly interested 6 in calculating anything for any other segments. 7 Q Okay. Where do these trucks come from? 8 A What trucks do you mean? 9 Q The trucks that are going to the TexCom 10 facility? 11 A Okay. I thought perhaps you meant trucks in 12 general traveling on that road. 13 Well, I've talked about in my prefiled a 14 little bit about that. And one of the things that I 15 thought about was what are some likely places where 16 the trucks come from, population centers, you know, 17 commercial or industrial areas, ultimately probably 18 mostly to the south from the Houston area. So a lot 19 of the trucks I would estimate would use I-45 as the 20 primary corridor to get close to the site. 21 Then from there I traced the most likely 22 highways that would be appealing and efficient and 23 suitable for truck traffic to use, and that would be 24 from Loop 336 over to FM 3083 and then into the site. 25 Q Can we agree that based upon your research on</p>

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<p style="text-align: right;">Page 1419</p> <p>1 this issue that the truck traffic that is going to 2 arrive at the TexCom facility -- proposed TexCom 3 facility -- does not originate at or near your 9400 4 number on Exhibit No. 83? 5 A I guess I don't have enough information to 6 know where the planned sources of wastewater are 7 located. For all I know, maybe there's a facility 8 right there that has wastewater to dispose in that 9 segment of interest. So I guess I'm not certain 10 really. 11 Q So when you were there for the two hours on 12 Saturday, you didn't get a good enough evaluation of 13 the industry in the area to determine where the trucks 14 were coming from? 15 A Well, I guess I don't -- not enough to know 16 whether they generate wastewater. I saw some 17 industries. I saw a couple of chemical plants. One 18 looked like it was in operation. One possibly was 19 abandoned. I have no idea whether they generate 20 wastewater or have their own provisions for disposing 21 of it in some other manner. I just don't know. 22 Q Where did Lou Ross advise you that the 23 wastewater was going to come? 24 A Primarily from south, areas south like the 25 greater Houston area.</p>	<p style="text-align: right;">Page 1421</p> <p>1 a 75-mile shot in each direction, but primarily south 2 and east? 3 A Yes. 4 Q Did he ever indicate to you any of the trucks 5 originating in Montgomery County that would be 6 delivering waste to the facility? 7 A He didn't get into specifics. He noted the 8 presence of a -- some kind of a chemical plant on, I 9 guess, Jefferson Chemical Road that he thought would 10 be a target for business. But I don't know one way or 11 the other whether that's feasible or not. 12 Q Do you remember what the name of that 13 business was? 14 A I don't. 15 Q Does Huntsman refresh your memory at all? 16 A That's it. I couldn't remember. 17 Q Do you remember reviewing something in your 18 preparation for today that was titled "TexCom Report 19 Government Contacts and Associated Findings"? 20 A I received it and I glanced at it very 21 briefly. So I barely remember it, but I think I paged 22 through it. 23 Q Does it at all form the basis of your 24 opinions in this case? 25 A I can't recall that there was anything</p>
<p style="text-align: right;">Page 1420</p> <p>1 Q So areas outside of the number 9400 that 2 we've been talking about near -- on 3083 on Exhibit 3 83? 4 A I would -- I guess I would say yes. We 5 didn't talk in a lot of detail about specifics. 6 Q Okay. And just to be clear, you did talk to 7 Lou Ross about where this waste was coming from? 8 A I did. I had a phone conversation with him. 9 Q And he advised you that their target area was 10 the Houston metro area? 11 A That may have been the way I wrote it down in 12 notes of my phone conversation. I can't remember the 13 exact words he used, but I seem to recall he said 14 they're targeting generally a 75-mile radius in all 15 directions from the proposed facility, but they expect 16 most of the sources of wastewater are towards the 17 south, closer to Houston. 18 Q I'm going to read from Line 13 of your 19 prefiled testimony -- I'm sorry, Page 13, Line 11. It 20 saying, "According to my discussions with Dr. Ross of 21 TexCom, the primary target market area for the 22 facility is to the south and east, the Houston 23 metropolitan area." Does that sound correct? 24 A Yes. 25 Q And you're stating that he said that included</p>	<p style="text-align: right;">Page 1422</p> <p>1 substantive that mattered to me in there. 2 Q Is that a "no"? 3 A It's an "I don't recall." I believe there 4 was nothing important in there as best I can remember. 5 It didn't stand out to me. 6 Q Do you recall a statement in that document 7 that said, "Huntsman Corporation has a UIC permit and 8 is closely tied with the Greater Conroe Economic 9 Development Corporation and other city-sponsored 10 activities"? 11 A I don't remember that. 12 Q Do you have any knowledge of whether Huntsman 13 has its own UIC well and whether it is planning 14 some -- whether it is, I guess, conspiring with the 15 City of Conroe to keep TexCom from getting its 16 permits? 17 A I have no idea. 18 Q But it just happened to be in the materials 19 you reviewed in preparation for this testimony today? 20 A Even when you just read that sentence to me, 21 it didn't resonate to me as anything important for 22 what I had to do. It just -- I don't know -- went 23 right over my head. I don't see the significance of 24 what you said. 25 Q Okay. Would you agree with me that that</p>

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<p style="text-align: right;">Page 1423</p> <p>1 statement was in the materials that you reviewed?</p> <p>2 A I'm going by what you read to me. I don't</p> <p>3 remember actually coming across that. Maybe if you</p> <p>4 showed me or something, at least that would confirm</p> <p>5 that it's in the same thing that I'm thinking of that</p> <p>6 you're reading from.</p> <p>7 MR. FORSBERG: May I approach the</p> <p>8 witness?</p> <p>9 JUDGE EGAN: Yes.</p> <p>10 (Discussion out of the hearing of the</p> <p>11 court reporter)</p> <p>12 JUDGE EGAN: Can you tell us the name of</p> <p>13 the document again?</p> <p>14 MR. FORSBERG: TexCom Report Government</p> <p>15 Contacts" --</p> <p>16 JUDGE WALSTON: Is that in the</p> <p>17 application or is that an exhibit that was produced or</p> <p>18 anything?</p> <p>19 MR. FORSBERG: It was produced to us at</p> <p>20 9 o'clock last night by the applicant.</p> <p>21 MR. RILEY: What time again? I've</p> <p>22 forgotten.</p> <p>23 MR. FORSBERG: It was 9:00 --</p> <p>24 JUDGE EGAN: It's not in evidence</p> <p>25 though?</p>	<p style="text-align: right;">Page 1425</p> <p>1 Montgomery County that you were advised by Mr. Ross</p> <p>2 would be trucking in material to the facility?</p> <p>3 MR. RILEY: Objection. Asked and</p> <p>4 answered.</p> <p>5 JUDGE EGAN: Overruled.</p> <p>6 A Maybe I'm getting confused. You're asking me</p> <p>7 are there any nonspecific areas of Montgomery County</p> <p>8 that --</p> <p>9 Q Let me rephrase and make sure we're on the</p> <p>10 same page.</p> <p>11 A Okay.</p> <p>12 Q You testified that there was a specific</p> <p>13 entity named Huntsman, I believe, that you recall</p> <p>14 hearing about maybe providing waste materials to the</p> <p>15 proposed facility. Is that fair?</p> <p>16 A I don't remember hearing about them providing</p> <p>17 waste materials to the facility.</p> <p>18 Q Okay.</p> <p>19 A Dr. Ross told me they're nearby and they</p> <p>20 would be -- he'd like to have them as a customer and</p> <p>21 that was about it.</p> <p>22 Q Okay. Did Dr. Ross in terms of that</p> <p>23 conversation or any other conversation identify any</p> <p>24 industry or businesses in Montgomery County, whether</p> <p>25 by name or not, that he anticipated would be providing</p>
<p style="text-align: right;">Page 1424</p> <p>1 MR. FORSBERG: Not yet.</p> <p>2 JUDGE EGAN: It is not in evidence?</p> <p>3 MR. FORSBERG: No.</p> <p>4 A This looks like what I just answered to you</p> <p>5 that I remember seeing but didn't really pay much</p> <p>6 attention to.</p> <p>7 Q (By Mr. Forsberg) So other than the Huntsman</p> <p>8 facility, which is referenced in documents you</p> <p>9 reviewed, as having its own UIC permit, was there any</p> <p>10 other Montgomery County facility that trucks were</p> <p>11 going to be coming from?</p> <p>12 A I sure don't recall anything specific.</p> <p>13 Q Do you recall anything nonspecific?</p> <p>14 A What would you mean by nonspecific?</p> <p>15 Q What did you mean by specific?</p> <p>16 (Laughter)</p> <p>17 A By specific we were just talking about the</p> <p>18 Huntsman facility.</p> <p>19 Q Okay.</p> <p>20 A Specific like a name of a facility. So I</p> <p>21 thought maybe you meant other specific names of --</p> <p>22 Q Okay.</p> <p>23 A -- facilities or sources.</p> <p>24 Q Were there any general areas of waste</p> <p>25 producers that were not specifically named in</p>	<p style="text-align: right;">Page 1426</p> <p>1 waste product to the TexCom facility?</p> <p>2 A I'm having a hard time remembering much</p> <p>3 beyond that he would seek customers in Montgomery</p> <p>4 County, but I definitely don't remember any specific</p> <p>5 by name. I think he may have said he would go after</p> <p>6 whatever other customers the market may bear in</p> <p>7 Montgomery County or something like that.</p> <p>8 Q If you would turn to Page 8 of your prefiled</p> <p>9 testimony, please.</p> <p>10 A Okay.</p> <p>11 Q You've done some calculations on this page</p> <p>12 with regards to what you anticipate the truck traffic</p> <p>13 to be in the first year. Is that fair?</p> <p>14 A Yes, that's correct.</p> <p>15 Q Within this calculation are you assuming that</p> <p>16 all trucks are the same size?</p> <p>17 A Yes, I am.</p> <p>18 Q In reality are all trucks the same size?</p> <p>19 A No.</p> <p>20 Q Would you agree with the statement that -- if</p> <p>21 you know -- that trucks disposing of this type of</p> <p>22 waste can be anywhere from 80-barrel maximum load to</p> <p>23 120 barrel -- I'm sorry, 40 barrel to 120 barrel?</p> <p>24 A I'm not aware of any restriction like that.</p> <p>25 Q I'm not asking about a law or restriction.</p>

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<p>1 I'm just asking about in common practice. Do you 2 understand that to be the range of what these trucks 3 are size-wise, if you know? 4 A I guess my experience with tanker trucks like 5 this is that a typical truck size is the number of 6 gallons that I've assumed for my calculation, which is 7 5,000, which I believe works out to approximately 8 120 barrels. 9 Q Would that be a larger truck or a smaller 10 truck? 11 A Typically that's a large truck like a 12 semi-trailer pulled tanker. 13 Q Okay. And you calculate that -- I guess you 14 count each truck twice, once for when it enters the 15 facility and once when it leaves? 16 A Correct. 17 Q So if you reduced those -- so if there's a 18 hundred trucks -- or I believe you have 100.8 trucks 19 or 101, that actually counts as 202 trucks? 20 A Yes, that's right. 21 Q So if you have trucks that are a third of the 22 size of the trucks that you've used in your model, but 23 carry the same volume, can we agree that there would 24 be three times the number of trucks? 25 A That's just simple math. Yes, you're</p>	<p>1 certain vantage point when you were at the site. Is 2 that correct? 3 A Yes, that's correct. 4 Q It looks like you make some notations with 5 regards to the commercial businesses in the area, a 6 Valero gas station, an abandoned chemical plant, a 7 another chemical plant. Is that correct? 8 A Yes. 9 Q Did you -- how much time did you take looking 10 at residential areas surrounding the facility? 11 A I guess just as much time as I spent looking 12 at everything else. It was really just observing 13 within approximately 1- to 2-mile radius on the 14 thoroughfares mentioned here, just types of, I guess, 15 land use or either undeveloped residential, business 16 of some kind. That's what I'm talking about here. 17 Q Would you agree with me that there's a number 18 of residential areas around the facility? 19 A Yes, I would. 20 Q And those are not developed as much as you've 21 developed the industrial in your prefiled testimony? 22 A I guess I would say I'm making mention of 23 more significant facilities or something more 24 noteworthy that I noticed. I start out by saying the 25 surroundings are rural with a mixture of mostly small</p>
Page 1428	Page 1430
<p>1 correct. 2 Q That simple math wasn't in your prefiled 3 testimony anywhere, right? 4 A The only math related to this issue is based 5 on typical truck size or capacity, and I didn't 6 provide different scenarios of -- other than what I -- 7 in my experience is a typical truck size. 8 Q So is it typical that all trucks are the same 9 size? 10 A Well, all trucks are not the same size. 11 Q Okay. 12 A A typical truck size is 5,000 gallons. 13 Q Okay. 14 A Some are more; some are less. 15 Q So you've gone on the assumption that all of 16 the trucks coming in and going out are of the larger 17 variety. Is that fair? 18 A Well, I wouldn't say that, because 5,000 19 gallons is something typical. So there may be 20 something larger to compensate for something smaller. 21 Q Would you turn to Page 10 of your prefiled 22 testimony, please? 23 A Okay. 24 Q It looks like you're -- just generally in the 25 top half of the page -- describing what you saw from a</p>	<p>1 retail and light industrial businesses, along with -- 2 along the highways -- along with individual residences 3 on acreage and some residential subdivisions. I guess 4 that sums it all up. 5 Q If you could turn to Page 12, please? 6 A (Witness complies) 7 Q If you look at Line 15, there's a question: 8 "In your experience, how is delivery of Class I 9 nonhazardous liquid waste to a disposal facility 10 generally arranged?" 11 And starting on Line 20, you state: 12 "Arrangements for waste disposal are typically made 13 prior to the tanker truck's arrival at the disposal 14 facility." 15 A Yes. 16 Q That is typically how you understand it 17 works? 18 A That is how I understand it works, yes. 19 Q Does that mean that these facilities 20 typically have a truck dispatcher or someone to take 21 calls from trucks? 22 A Yeah. My understanding is there's a 23 designated person who would field calls from 24 customers. So a customer would call and say, "I have 25 either an individual load or an ongoing contract for,</p>

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<p style="text-align: right;">Page 1431</p> <p>1 you know, loads at a certain time interval." And a 2 person at the facility would go through the -- what's 3 set forth in the waste acceptance program to prescreen 4 whether the waste meets certain criteria and whether 5 it's ultimately acceptable for disposal at the 6 facility and then arrange for delivery. 7 Q Have you been specifically told that that is 8 how it's going to be done at the TexCom facility? 9 A I had a conversation with Dr. Ross, and I'm 10 having trouble remembering exactly how much detail we 11 went into. I think it's consistent with what he told 12 me. What I'm really talking about here is my 13 experience on another facility that accepts Class I 14 industrial waste. 15 Q So you're just applying that facility, and 16 based upon what you know you're assuming that that's 17 the way it's going to be done for TexCom at this 18 proposed facility? 19 A I believe when I talked to Dr. Ross, I 20 explained my experience and said, "Is that basically 21 what you plan to do?" And I remember him saying 22 that's consistent. There may be nuances that are 23 different. 24 Q Did you look at any proposed new subdivisions 25 that are planned in the area along 3083 or in the</p>	<p style="text-align: right;">Page 1433</p> <p>1 anything that was of concern to me. 2 Q But that's not what you were looking for, 3 just to be fair. Is that correct? 4 A I was looking -- as I mentioned from the 5 start -- looking at the geometric conditions, the 6 general conditions, of the surrounding highways. I 7 mean, the underlying reason for -- or underlying 8 objective is -- of my evaluation here was to look at 9 the availability and adequacy of surrounding roadways. 10 So part of that has to do with is there anything that 11 raised a red flag in my mind as being unsafe. So I 12 was paying attention to that. 13 Q But you didn't do any actual analysis of the 14 number of crashes on any of the roads or any of the 15 intersections or anything like that? I'm just trying 16 to make sure I understand what your opinions are, and, 17 I mean, they don't include that? 18 A I did not evaluate that. 19 Q Just one or two last questions. If you could 20 look at Exhibit No. 83, please? 21 A Okay. 22 Q I just want to clarify, is this a map that 23 geo -- what's the origin of this map? 24 A The origin of this map is TxDOT. It's a 25 TxDOT highway map available online that we obtained</p>
<p style="text-align: right;">Page 1432</p> <p>1 immediate area of the proposed facility? 2 A No, I did not. 3 Q Would that be something that would be 4 important in your calculation if there is a large 5 subdivision that is in preplanning? 6 A For the scope of what I was looking at, I 7 would say no. For permitting of waste disposal 8 facilities like landfills, which is something I do in 9 my career, that type of information is useful. 10 Q If there's a large new subdivision or even a 11 moderately size new subdivision, that affects the 12 amount of traffic on the roads, wouldn't it? 13 A Yes, it does. 14 Q Now, did you just look at the quantity or the 15 traffic congestion, or did you also make any analysis 16 of the safety in regards to the increased truck 17 traffic? 18 A I didn't make any quantitative analysis of 19 safety. When I visited the surrounding roadways, I 20 paid attention to are there any significant geometric 21 features of the roadway or condition of pavement or 22 things like that that could pose potential safety 23 problems. But I didn't explicitly do any type of a 24 calculation or sight distance or stopping distance or 25 things like that. But I would say I didn't note</p>	<p style="text-align: right;">Page 1434</p> <p>1 and added the site location and the radius around the 2 site. 3 Q Is it your -- are you trying -- strike that. 4 Would you agree with me that there are a 5 lot of residential roads around the area of the site 6 on this map that are not indicated on this map? 7 A I don't know if I have enough familiarity 8 with the real -- the very small roads in this area. I 9 see -- I'm not -- I guess what I'm saying is I'm not 10 sure if you were to zoom into this map if more detail 11 would appear, kind of like what happens on MapQuest or 12 something like that -- 13 Q Right. 14 A -- where there's more roads that are unknown. 15 Q That's fair. And I'm just trying to make 16 sure that -- with this map you're not trying to show 17 that no one lives around the facility? 18 A That's not the intent of this map, no. 19 MR. FORSBERG: That's all I have, Your 20 Honors. Pass the witness. 21 JUDGE EGAN: Ms. Collins. 22 MS. COLLINS: Just a single question. 23 JUDGE EGAN: I'm sorry, I couldn't hear 24 you. 25 MS. COLLINS: Hopefully just a single</p>

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<p style="text-align: right;">Page 1435</p> <p>1 question.</p> <p>2 JUDGE EGAN: Okay.</p> <p>3 CROSS-EXAMINATION</p> <p>4 BY MS. COLLINS:</p> <p>5 Q Mr. Graves, my name is Emily Collins. I'm</p> <p>6 with the TCEQ Office of Public Interest Counsel.</p> <p>7 A Good evening.</p> <p>8 Q Good evening to you. I'm not quite sure that</p> <p>9 I understand whether you were in fact recommending</p> <p>10 that the drive -- the entrance be relocated to FM 3083</p> <p>11 or not. Could you tell me the answer to that?</p> <p>12 A I'm not recommending it.</p> <p>13 Q Okay.</p> <p>14 A In my experience I don't see anything that</p> <p>15 would preclude relocating it. As I've testified</p> <p>16 earlier, I didn't explicitly look at every TxDOT</p> <p>17 criteria to know whether or not for sure it could be</p> <p>18 done, but I've seen that type of thing done in</p> <p>19 conditions like this.</p> <p>20 Q Okay. Would it be -- well, it sounds like if</p> <p>21 they entered on -- let me see if I get this right --</p> <p>22 Crighton/Creighton Road, if they use that as a route,</p> <p>23 those roads are -- I think you listed them as poor as</p> <p>24 far as conditions, correct?</p> <p>25 A I didn't say that the quality of the roads is</p>	<p style="text-align: right;">Page 1437</p> <p>1 on Line 11, do you see the question?</p> <p>2 A Okay.</p> <p>3 Q The question is: "Would moving the site</p> <p>4 entrance to FM 3083 affect your analysis of traffic</p> <p>5 impacts from TexCom?" And it -- is a summary of your</p> <p>6 answer that it would affect your analysis? Does it</p> <p>7 affect your analysis?</p> <p>8 A My analysis reported the impacts to Creighton</p> <p>9 Road. It would basically take that out of what I</p> <p>10 would report, because if there's no longer facility</p> <p>11 traffic attributed to that roadway then it just would</p> <p>12 eliminate -- I guess eliminate it from my evaluation.</p> <p>13 Q So you have absolutely no opinion as to which</p> <p>14 route would be more safe. Is that correct?</p> <p>15 A I would say, no, I don't have an opinion. I</p> <p>16 don't see that either is substantially beneficial one</p> <p>17 way or the other. But part of what would need to be</p> <p>18 looked at for the FM 3083 possible entrance would be</p> <p>19 whether or not improvements would be necessary to FM</p> <p>20 3083 like turn lanes and deceleration lanes which I</p> <p>21 talked about a little bit earlier. It's just</p> <p>22 something I didn't look at as part of a more detailed</p> <p>23 design. TxDOT would provide input on that, and so</p> <p>24 there is a process to make sure that it would be a</p> <p>25 safe driveway.</p>
<p style="text-align: right;">Page 1436</p> <p>1 poor, just the condition of the payment and things</p> <p>2 like that.</p> <p>3 Q Would that be a public safety issue in your</p> <p>4 mind?</p> <p>5 A I didn't see any public safety issues. It's</p> <p>6 more of a driver comfort issue, going over potholes</p> <p>7 and puddles and things like that.</p> <p>8 Q Driver comfort issues and drivers might not</p> <p>9 be able to navigate that sort of road as well.</p> <p>10 A I wouldn't agree with that.</p> <p>11 Q Okay.</p> <p>12 A One of the reasons for speed limits takes</p> <p>13 into account things like, you know, the geometry of</p> <p>14 the road and just the general condition of the road</p> <p>15 and things like that.</p> <p>16 Q I thought that you noted those roads didn't</p> <p>17 have a posted speed limit. Is that incorrect?</p> <p>18 A Crighton has a speed limit, which I'd have to</p> <p>19 check whether it was 40 or 45 mile-per-hour. It was</p> <p>20 Albert Moorehead, I believe, that I mentioned I didn't</p> <p>21 see a posted speed limit. But there's such a small</p> <p>22 segment of that road that we're talking about, so I</p> <p>23 just didn't encounter it within the small area of</p> <p>24 interest.</p> <p>25 Q Okay. On Page 15 of your prefiled, beginning</p>	<p style="text-align: right;">Page 1438</p> <p>1 MS. COLLINS: Okay. Thank you. No</p> <p>2 further questions.</p> <p>3 JUDGE EGAN: Any questions?</p> <p>4 MR. WILLIAMS: No questions from the</p> <p>5 Executive Director.</p> <p>6 JUDGE EGAN: Do you have any questions.</p> <p>7 JUDGE WALSTON: No.</p> <p>8 JUDGE EGAN: Okay. Mr. Riley, is it all</p> <p>9 right if I ask a few clarifying questions?</p> <p>10 MR. RILEY: Of course.</p> <p>11 CLARIFYING EXAMINATION</p> <p>12 BY JUDGE EGAN:</p> <p>13 Q Moorehead is the road you turn onto off of</p> <p>14 383. Is that correct?</p> <p>15 A That's correct.</p> <p>16 Q And is that a two-lane road?</p> <p>17 A It is a two-lane road, yes.</p> <p>18 Q Then how far is it to Crighton or Creighton?</p> <p>19 A A few hundred feet. It's very short.</p> <p>20 Q And then --</p> <p>21 A If I could maybe direct you to a map -- a</p> <p>22 better map, I think, is Exhibit 82 because it does</p> <p>23 highlight the site.</p> <p>24 Q That's the one I'm looking at.</p> <p>25 A Okay.</p>

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<p style="text-align: right;">Page 1439</p> <p>1 Q And so a few hundred feet would be 200 feet?</p> <p>2 Because that's a little tiny section and if one inch</p> <p>3 equals a half mile --</p> <p>4 A Yeah, it's going to be hard to get a detailed</p> <p>5 scale. I could try to do my best here, but it's on</p> <p>6 the order of 2 to 300 feet.</p> <p>7 Q And so a tanker would be turning onto a</p> <p>8 two-lane road and then making an immediate turn on --</p> <p>9 almost immediate turn on to Crighton Road?</p> <p>10 A Yes.</p> <p>11 Q And is there a ditch on either side of the</p> <p>12 road or is it a flat where they can actually drive off</p> <p>13 the road if they have to to make that turn?</p> <p>14 A I don't think they would need to drive off</p> <p>15 the road to make that turn --</p> <p>16 Q Is Crighton a two-lane road also?</p> <p>17 A Creighton is a two-lane road, yes.</p> <p>18 Q Do you recall what is on either -- is on the</p> <p>19 side --</p> <p>20 A Just grassy open areas. I recall it had</p> <p>21 rained the night before and there were some puddles.</p> <p>22 There weren't any significant ditches, but there are</p> <p>23 probably small ditches that function to some extent in</p> <p>24 that area. It was really just a pretty flat grassy</p> <p>25 area on either side of the road at that intersection.</p>	<p style="text-align: right;">Page 1441</p> <p>1 open for the protestants to reply to Ms. Barry's</p> <p>2 testimony and Mr. Graves. So I think we would need a</p> <p>3 date for that first, and then a date for replies from</p> <p>4 the applicant before we --</p> <p>5 JUDGE EGAN: Do y'all need a few moments</p> <p>6 to see -- to discuss among yourselves if you want the</p> <p>7 record left open to call potentially any witnesses, or</p> <p>8 do you need some time -- you want to take a short</p> <p>9 break to --</p> <p>10 JUDGE WALSTON: Sure, that's fine.</p> <p>11 JUDGE EGAN: Why don't we take a short</p> <p>12 break. Y'all can confer among yourselves and make --</p> <p>13 see if you need more time to make that decision. If</p> <p>14 not, then we can come up with a briefing schedule and</p> <p>15 move forward.</p> <p>16 JUDGE WALSTON: And while on the break,</p> <p>17 you might also discuss a briefing schedule.</p> <p>18 JUDGE EGAN: Okay. We'll come back at</p> <p>19 6:30?</p> <p>20 (Recess: 6:13 p.m. to 6:30 p.m.)</p> <p>21 JUDGE EGAN: Let's go back on the</p> <p>22 record. We've had a short discussion regarding</p> <p>23 several matters. Let me just go through them and</p> <p>24 correct me if I'm wrong on any of them.</p> <p>25 Mr. Williams, you requested that we</p>
<p style="text-align: right;">Page 1440</p> <p>1 JUDGE EGAN: Any further questions,</p> <p>2 Mr. Riley?</p> <p>3 MR. RILEY: I have about 45 minutes of</p> <p>4 redirect -- I'm just kidding. I thought that would</p> <p>5 amuse everybody.</p> <p>6 (Laughter)</p> <p>7 JUDGE EGAN: Okay.</p> <p>8 JUDGE WALSTON: Got my attention.</p> <p>9 MR. RILEY: I have no questions. Thank</p> <p>10 you.</p> <p>11 JUDGE EGAN: All right. Did anybody</p> <p>12 have any questions given my questions?</p> <p>13 Okay. Then you are excused. Thank you.</p> <p>14 Is that it?</p> <p>15 MR. RILEY: Yes, no more joking. I have</p> <p>16 no witnesses remaining and I thank everyone for their</p> <p>17 time and attention, and that is the applicant's case.</p> <p>18 JUDGE EGAN: All right. Have the</p> <p>19 parties had a chance to talk about -- we mentioned off</p> <p>20 the record briefing schedule, briefing outlines --</p> <p>21 MR. WILLIAMS: Your Honor, before we</p> <p>22 get --</p> <p>23 JUDGE EGAN: Who's talking -- I'm sorry.</p> <p>24 MR. WILLIAMS: Before we get to a</p> <p>25 briefing schedule, you had offered to leave the record</p>	<p style="text-align: right;">Page 1442</p> <p>1 issue two different PFDs, one for the facility and the</p> <p>2 other for the underground injection well.</p> <p>3 MR. WILLIAMS: Thank you, yes.</p> <p>4 JUDGE EGAN: And then, Mr. Riley, I</p> <p>5 understand that you withdraw any concerns regarding</p> <p>6 Lone Star Exhibit 19?</p> <p>7 MR. RILEY: I withdraw any objection. I</p> <p>8 still have concerns.</p> <p>9 JUDGE EGAN: Withdrew any objections, so</p> <p>10 Exhibit 19 is now admitted for all purposes.</p> <p>11 (LS/District Exhibit 19 admitted)</p> <p>12 JUDGE EGAN: It's also my understanding</p> <p>13 from Mr. Forsberg and Mr. Walters --</p> <p>14 JUDGE WALSTON: Walker.</p> <p>15 JUDGE EGAN: What did I say?</p> <p>16 JUDGE WALSTON: Walters.</p> <p>17 JUDGE EGAN: What can I say? It's been</p> <p>18 a long day -- Mr. Walker that they do not want to</p> <p>19 submit any additional witnesses to address the</p> <p>20 rebuttal witnesses called by the applicant in this</p> <p>21 matter and wish the record to be closed. Is that</p> <p>22 correct?</p> <p>23 MR. WALKER: That's correct, Your Honor.</p> <p>24 MR. FORSBERG: That's correct.</p> <p>25 JUDGE EGAN: And the District, too.</p>

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HEARING ON THE MERITS

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<p style="text-align: right;">Page 1443</p> <p>1 MR. GERSHON: That's correct, Your 2 Honor. 3 JUDGE EGAN: And the briefing schedule, 4 I'll let one of the parties speak for the record -- 5 MR. RILEY: Sure. We talked about 6 having an agreed-upon issue list by January 15th, 7 which I believe is a Tuesday. We'll make our best 8 efforts as we described off the record to see that 9 happen. Typically, I'm not sure you're aware of this, 10 we end up with a catch-all provision, other things 11 that maybe we can't agree on. We'll try to harmonize 12 it by January 15th. 13 February 4th is the deadline for written 14 closing arguments, and then February 25th is the 15 deadline for replies to those closing arguments. 16 JUDGE EGAN: And that's what everyone 17 else understands as well and everyone is in agreement. 18 Are there any other issue that we need 19 to address on the record? 20 MR. RILEY: Oh, the infamous appeals set 21 of exhibits. We have it available. If anybody would 22 like -- and we talked about it at one point prior or 23 previously in the proceeding -- that it is in Order 24 No. 1 -- it is a feature of, I think, most Order No. 25 1s from SOAH -- that has us have an appeals set, and</p>	<p style="text-align: right;">Page 1445</p> <p>1 C E R T I F I C A T E 2 STATE OF TEXAS) 3 COUNTY OF TRAVIS) 4 5 We, Lou Ray, Evie Coder and 6 Patricia Gonzalez, Certified Shorthand Reporters in 7 and for the State of Texas, do hereby certify that the 8 above-mentioned matter occurred as hereinbefore set 9 out. 10 WE FURTHER CERTIFY THAT the proceedings 11 of such were reported by us or under our supervision, 12 later reduced to typewritten form under our 13 supervision and control and that the foregoing pages 14 are a full, true, and correct transcription of the 15 original notes. 16 IN WITNESS WHEREOF, we have hereunto set 17 our hand and seal this 7th day of January 2008. 18 19 20 21 22 23 24 25</p> <hr/> <p>LOU RAY Certified Shorthand Reporter CSR No. 1791-Expires 12/31/09 Firm Certification No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233</p>
<p style="text-align: right;">Page 1444</p> <p>1 we've never found a home for the several we've had. 2 So we have one, and if you would like us to deliver it 3 to any particular place, we're happy to do that. 4 JUDGE WALSTON: We'll get with you. 5 What we'll do is we'll issue like a posthearing 6 briefing schedule with these dates. 7 MR. RILEY: Of course we're happy to 8 keep it at our offices, too, and when -- when and if 9 this is appealed, we'll provide it at that time. 10 JUDGE EGAN: Okay. Anything else? 11 All right. Then we're adjourned. Thank 12 you all. Have a safe trip home. 13 (Proceedings concluded at 6:34 p.m.) 14 15 16 17 18 19 20 21 22 23 24 25</p>	<p style="text-align: right;">Page 1446</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <hr/> <p>EVIE CODER Certified Shorthand Reporter CSR No. 2845-Expires 12/31/09 Firm Certification No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233</p> <hr/> <p>PATRICIA GONZALEZ Certified Shorthand Reporter CSR No. 6367-Expires 12/31/08 Firm Certification No. 276 Kennedy Reporting Service, Inc. Cambridge Tower 1801 Lavaca Street, Suite 115 Austin, Texas 78701 512.474.2233</p>

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